REPORT OF THE VIRGINIA ECONOMIC DEVELOPMENT PARTNERSHIP

Natural Gas Pipeline Extension Impact on Accomack County, Virginia (2022 Appropriation Act, Item 125.P.)

TO THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 17

COMMONWEALTH OF VIRGINIA
RICHMOND
2022

NATURAL GAS PIPELINE EXTENSION

IMPACT ON ACCOMACK COUNTY, VIRGINIA



Prepared for

VEDP Virginia Economic Development Partnership

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DECEMBER 2022

About Mangum Economics, LLC

Mangum Economics is a Glen Allen, Virginia based firm that was founded in 2003. Since then, we have become known as a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. The Mangum Team specializes in producing objective and actionable quantitative economic research that our clients use for strategic decision making in a variety of industries and environments. We know that our clients are unique, and that one size does not fit all. As a result, we have a well-earned reputation for tailoring our analyses to meet the specific needs of specific clients, with a specific audience.

Most of our research falls into four general categories:

- **Information Technology:** Working with some of the largest names in the industry, to date the Mangum Team has produced analyses of the economic and fiscal impact of the data center industry in Virginia, home to the largest concentration of data centers in the world, and in five other states.
- **Energy:** The Mangum Team has produced analyses of the economic and fiscal impact of over 16 GW of proposed solar, wind, battery storage, and hydro projects in more than 15 states. Among those projects was Dominion Energy's 2.6 GW Coastal Virginia Offshore Wind project off of Virginia Beach. In addition, the Mangum Team has also performed economic and fiscal impact analyses for the natural gas, nuclear, oil, and pipeline industries.
- **Economic Development and Special Projects:** The Mangum Team has performed hundreds of analyses of proposed economic development projects. Most recently, we were called upon by Henrico County to provide an analysis of the proposed $2.3 billion Green City "net-zero eco district." The Mangum Team has also authored multiple economic development plans, including identifying industries that were likely recruitment targets because of the high-speed MAREA and BRUSA sub-sea cable landings in Virginia Beach.
- **Education and Workforce:** The Mangum Team has worked with multiple post-secondary and secondary education institutions to quantify their economic contribution to their host communities as well as their impact on regional and statewide workforce needs.

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Executive Summary

This report assesses the potential economic and fiscal impact on Accomack County and on the Commonwealth of Virginia associated with the extension of an existing Maryland natural gas pipeline, owned by Chesapeake Utilities Corporation (Chesapeake Utilities), to customers in Accomack County, Virginia. That assessment is based on: 1) an empirical analysis of baseline economic conditions in Accomack County and the impact the pipeline extension could have on the County, and 2) multiple interviews with private and government sector stakeholders in the region.

The principal findings from that assessment are as follows:

- **Chesapeake Utilities has continuously expanded its distribution system along the Delmarva Peninsula over the last 50 years.**
    - The most recent expansion was the Del Mar Pathway Project, which began construction in 2020 and extended piped natural gas south into the Maryland counties of Wicomico and Somerset, across the state line to the north of Accomack County, Virginia.
    - Chesapeake Utilities has completed a desktop evaluation of the potential expansion of natural gas utility service into Accomack County. Identified anchor tenant customers include Tyson, Perdue, the NASA Wallops Flight Facility, and adjacent enterprises.
    - As with many infrastructure projects, the potential expansion of natural gas utility service to serve anchor tenant customers in Accomack County may require some amount of public support to make it economically viable. However, because the project is in a preliminary stage Chesapeake Utilities was unable to provide specific information on the level of public support that would be required.
- **Accomack County, like many rural Virginia communities, faces multiple challenges.**
    - Between March 2012 and March 2022, the County experienced a 4.5 percent loss in employment as compared to an 8.0 percent increase in employment statewide in Virginia.
    - Between 2011 and 2021, the County experienced a 9 percent loss in its working-age population (18 to 64) in contrast to a 2 percent increase statewide in Virginia.
- **Accomack County does not currently have access to piped natural gas and that places it at a competitive disadvantage with other communities inside and outside of Virginia.**
    - Thirty-nine percent of households in Accomack County use propane or fuel oil for heat and water, as compared to 8 percent statewide in Virginia. In contrast, only 1 percent of households in the County use natural gas, as compared to 33 percent statewide in Virginia.

- Data provided by the Virginia Economic Development Partnership (VEDP) show that typically a third or more of industrial development prospects that were looking at sites of 25 acres or more in Virginia over the last five fiscal years expressly listed the availability of natural gas as a requirement.
- According to data from the U.S. Energy Information Administration, the price of natural gas per one million BTUs is:
  - 57 percent less expensive than propane and 71 percent less expensive than electricity for residential users, and
  - 62 percent less expensive than propane and 75 percent less expensive than electricity for industrial users.

- **Mangum Economics conducted 21 in-person and virtual interviews with 35 private sector and government stakeholders to obtain their perspectives on the development potential of extending piped natural gas into Accomack County. The major themes from those conversations were:**
  - **Natural gas is critical to securing the continued operation of the Perdue and Tyson chicken processing plants.** Together, these plants directly account for approximately one-third of all private sector employment in Accomack County and indirectly support a large number of poultry operations, grain producers, and other businesses in the county. Both plants use propane as a main fuel source and purchase millions of gallons each year. The higher cost of propane compared to piped natural gas places these plants at a significant competitive disadvantage relative to other processing facilities across the country where piped natural gas is available.
  - **Other existing employers within Accomack County would also benefit from access to piped natural gas if it were available.** For example, the Commonwealth Chesapeake power station, an intermittent "peak load" generation facility; Coastline Chemical, a company that blends and packages anti-freeze; SharpTech USA, a company that produces glycol and glycol-based products; and Accomack County public schools.
  - **The ongoing expansion of commercial space activity at the NASA Wallops Flight Facility is a potentially transformative economic opportunity for the county.** Rocket Lab recently selected Wallops Island as the launch site for its new Neutron rocket and announced that it would be bringing up to 250 professional and technical jobs to Accomack County to support manufacturing and operations facilities that will be part of the Neutron rocket program. Like many newer rocket designs, the Neutron rocket uses liquid methane (natural gas) as a propellant.
  - **The extension of piped natural gas to Accomack County would also enhance the development of manufacturing, warehousing and distribution, controlled environment agriculture, and much-needed residential housing.**

- **Maryland counties bordering Virginia provide a real-world example of what could happen if piped natural gas was extended into Accomack County.**
    - Chesapeake Utilities' Del Mar Pathway Project began construction in January 2020 and, among other improvements, extended piped natural gas to anchor tenants University of Maryland Eastern Shore and Maryland Eastern Correctional Institute in Somerset County, Maryland.
    - Somerset County is immediately northwest of Accomack County across the state line and the two counties are similar. Both are rural, are experiencing declining populations, are less affluent, and face many of the other challenges that are common among rural communities.
    - In addition to providing piped natural gas to the anchor tenants, the Del Mar Pathway Project also appears to have had a significant positive impact on Somerset County's Princess Anne Industrial Park. Immediately after pipeline construction began, the park experienced "an explosion" of activity as multiple manufacturers announced plans to move to the park.
- **Mangum Economics' analysis of the economic and fiscal impact of the proposed extension of piped natural gas into Accomack County shows that:**
    - **The downside risk of not proceeding with the project could include the ultimate closure of the Perdue and Tysons chicken processing plants which would cause a loss to Accomack County of approximately:**
        - 4,160 direct, indirect, and induced jobs.
        - $183.5 million in associated annual labor income.
        - $1.2 billion in annual economic output.
        - $22.2 million in annual state and local tax revenue.
    - **At a minimum, the construction and operation of the proposed natural gas pipeline extension in Accomack County would likely support approximately:**
        - 143 direct, indirect, and induced one-time construction jobs.
        - $7.0 million in associated one-time labor income.
        - $21.2 million in one-time construction-related economic output.
        - $1.0 million in one-time construction-related state and local tax revenue.
        - Ongoing savings of approximately $6.9 million in annual fuel costs for existing anchor tenants.

- **If the availability of piped natural gas in Accomack County were to facilitate the recruitment of additional industries the economic and fiscal impact on the county could be significant. For example, if even one Snack Food Manufacturing Facility were recruited to the county along with one Precision Cleaning Service and one Non-Destructive Weld Testing Service as suppliers to Rocket Lab, those additional industrial users could support approximately:**
  - 188 direct, indirect, and induced jobs.
  - $10.8 million in associated annual labor income.
  - $68.1 million in annual economic output.
  - $1.2 million in annual state and local tax revenue.

This report was commissioned by the Virginia Economic Development Partnership on behalf of the Virginia General Assembly and prepared by Mangum Economics.

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

Introduction & Project Summary

This report assesses the potential economic and fiscal impact on Accomack County associated with the extension of an existing Maryland natural gas pipeline, owned by Chesapeake Utilities Corporation, to customers in Accomack County, Virginia. This report was commissioned by the Virginia Economic Development Partnership on behalf of the Virginia General Assembly and prepared by Mangum Economics.

Mangum Economics performed stakeholder interviews, calculated the one-time economic impact stemming from the construction of the pipeline, evaluated the potential ongoing impact the pipeline could have on existing businesses in Accomack County, and assessed the economic development opportunities stemming from the availability of natural gas in the county.

Natural Gas Deployment on the Delmarva Peninsula

HISTORY OF EXPANSIONS

Founded in 1859 as Dover Gas Light Company in Dover, Delaware, Chesapeake Utilities Corporation (Chesapeake Utilities) today serves more than 300,000 distribution customers in several states. The company operates multiple subsidiaries in the natural gas transmission and distribution, electricity generation and distribution, propane distribution, and mobile compressed natural gas utility services and solutions sectors.

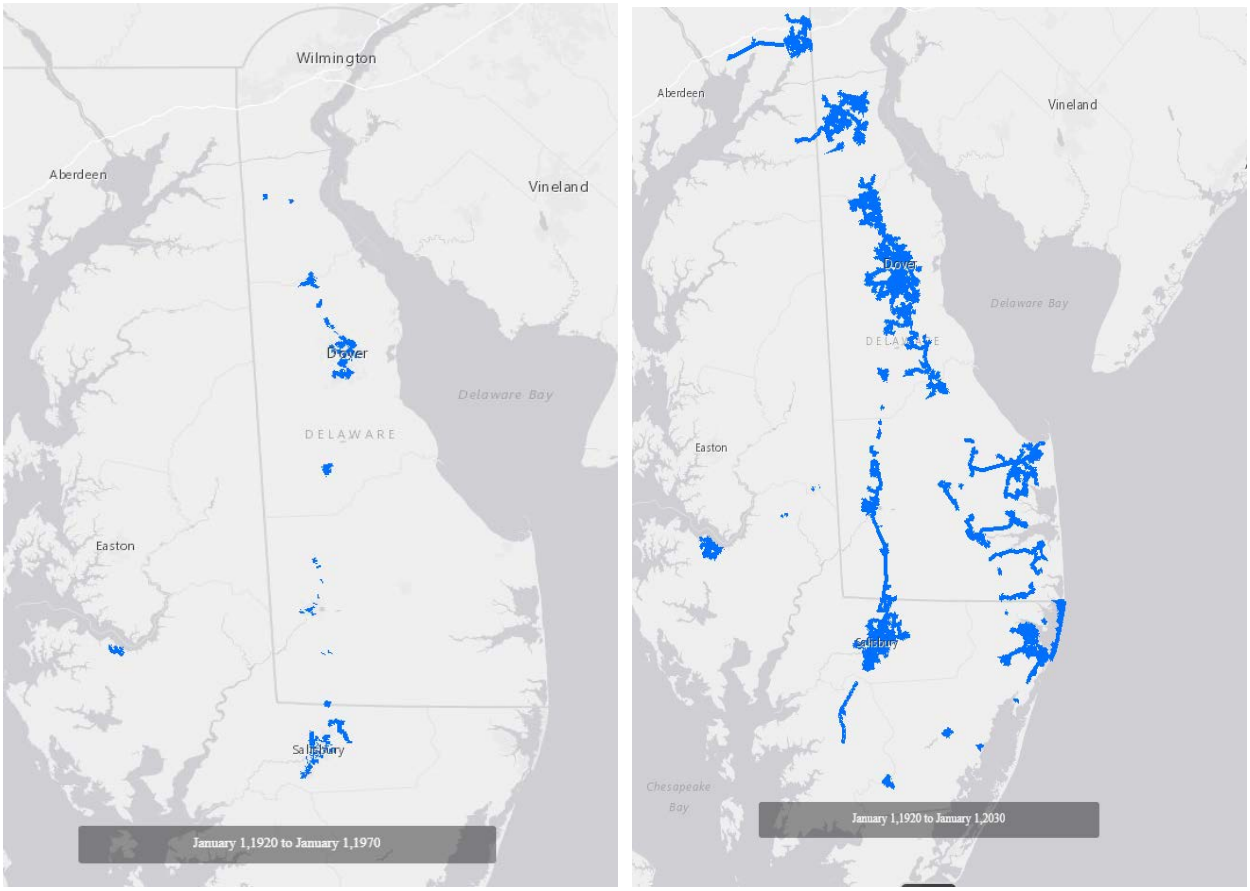
Chesapeake Utilities has continuously expanded its distribution system along the Delmarva Peninsula and Maryland Eastern Shore over the last 50 years. Figure 1 portrays the development of the company's distribution system. The image on the left shows the local utility infrastructure in 1970 and the image on the right reflects the system as of today.

Among the major recent expansions along the Delmarva Peninsula and Eastern Shore were the 2011 System Expansion, the 2012 Cecil County Expansion, the 2013 Greenspring Expansion, reliability improvements in Delaware, the 2017 Expansion Project, and the Del Mar Energy Pathway Project.

The reliability improvements to the Delaware interstate pipeline system were approved by the Federal Energy Regulatory Commission (FERC) in 2016. The $36 million project consisted of the construction of 10.1 miles of pipeline to loop in New Castle County and Kent County, Delaware and the addition of 1,775 horsepower of compression to an existing facility in Sussex County, Delaware.[1]

[1] Data Source: Chesapeake Utilities Corporation. Eastern Shore Natural Gas Receives FERC Approval to Construct and Operate New Facilities in Delaware to Sustain Reliability. August 5, 2016.

Figure 1: Chesapeake Utilities Corporation Distribution System Growth over Time (1970 on left and Today on right)[2]



The 2017 Expansion Project, which was completed in 2020, was considered one of Eastern Shore Natural Gas company's (a subsidiary of Chesapeake Utilities) largest expansion projects. The $117 million project added approximately 23 miles of pipeline looping in Pennsylvania, Delaware, and Maryland, added compression to the system, upgraded existing metering facilities, and provided 17 miles of new mainline extensions.[3] The project was expected to "increase the firm transportation deliverability to the region by approximately 25 percent, supporting economic growth in the region".[4]

The Del Mar Energy Pathway Project submitted its application for regulatory approval in 2018 and project construction began in January 2020. The $37 million project included the construction of 19 miles of pipeline as well as new meter and delivery stations in Kent and Sussex Counties, Delaware and in Wicomico and Somerset Counties, Maryland. Construction was completed in September 2021. The project was of significance because it provides access to natural gas to residences and businesses in Somerset County, Maryland. Prior to this project, Somerset County, an economically disadvantaged

[2] Data Source: Chesapeake Utilities Corporation.
[3] Data Source: Eastern Shore Natural Gas website. 2017 Expansion Project / 2020s
[4] Data Source: Chesapeake Utilities Corporation website. Chesapeake Utilities Corporation Announces Largest Natural Gas Pipeline Expansion in Company History. November 2, 2016.

community, was one of only three Maryland localities without access to natural gas. Somerset County commissioners had been working on adding natural gas infrastructure to the county for decades.[5]

Figure 2 shows Chesapeake Utilities' natural gas service map. Natural gas is currently available as far South as Westover, Maryland, which is approximately 6 miles south of Princess Anne, Maryland in Somerset County. Chesapeake Utilities recently obtained the required permit to cross over the Pocomoke River, which will allow the company to extend the pipeline to Pocomoke City, Maryland.

Figure 2: Chesapeake Utilties Natural Gas Service Map[6]

[5] FERC Approves Eastern Shore Natural Gas Company Expansion, January 7, 2020 and Del Mar Energy Pathway Project and stakeholder interviews.

[6] Data Source: Chesapeake Utilities Corporation website. "Map shows energy service in the Delaware, Maryland and Virginia area. In Delaware, the map shows service in New Castle, Kent and Sussex counties and highlights the cities of Middletown, Dover and Georgetown. In Maryland, map shows service in Caroline, Cecil, Dorchester, Wicomico and Worcester counties and highlights the cities of Elkton, Denton, Cambridge, Salisbury, Ocean City, Princess Anne and Snow Hill. Also shown is a compressed natural gas (CNG) fueling station located in Dover, DE."

POTENTIAL EXPANSION PROJECT INTO ACCOMACK COUNTY

Chesapeake Utilities has completed a desktop evaluation of the potential expansion of natural gas utility service to serve anchor tenant customers in Accomack County, Virginia; with the capacity to both extend further south and serve additional customers in Northampton and Accomack Counties. Identified anchor tenant customers include Tyson in Temperanceville, Perdue in Accomack, the NASA Wallops Flight Facility, and adjacent enterprises.

Expansion infrastructure includes approximately 21 miles of high-pressure coated steel main to run from Westover, Maryland to Oak Hall, Virginia. Additionally, approximately 28 miles of gas distribution main would extend to anchor tenant facilities. Five metering and pressure regulation stations would be included as well as approximately either eight miles of upstream main improvements with six metering and regulating stations (scenario 1) or sixteen miles of upstream main (scenario 2). The infrastructure is envisioned to run in public rights of way. Scenario 1 would provide for 5,500 dekatherms per day of firm capacity while scenario 2 would add up to 7,000 dekatherms per day of off-peak firm capacity.

As with many infrastructure projects, the potential expansion of natural gas utility service to serve anchor tenant customers in Accomack County may require some amount of public support to make it economically viable. However, because the project is in a preliminary stage Chesapeake Utilities was unable to provide specific information on the level of public support that would be required. Desktop estimates of total investment in the project are between $75.0 to $97.5 million to provide service to likely anchor tenants with some room to accommodate residential or other ancillary development (scenario 1), or between $100.0 to $130.0 million to accommodate significant additional industrial users (scenario 2). A significant portion of that investment is necessitated by upstream improvements that would be needed to deliver piped natural gas into Accomack County.

Baseline Profile of Accomack County

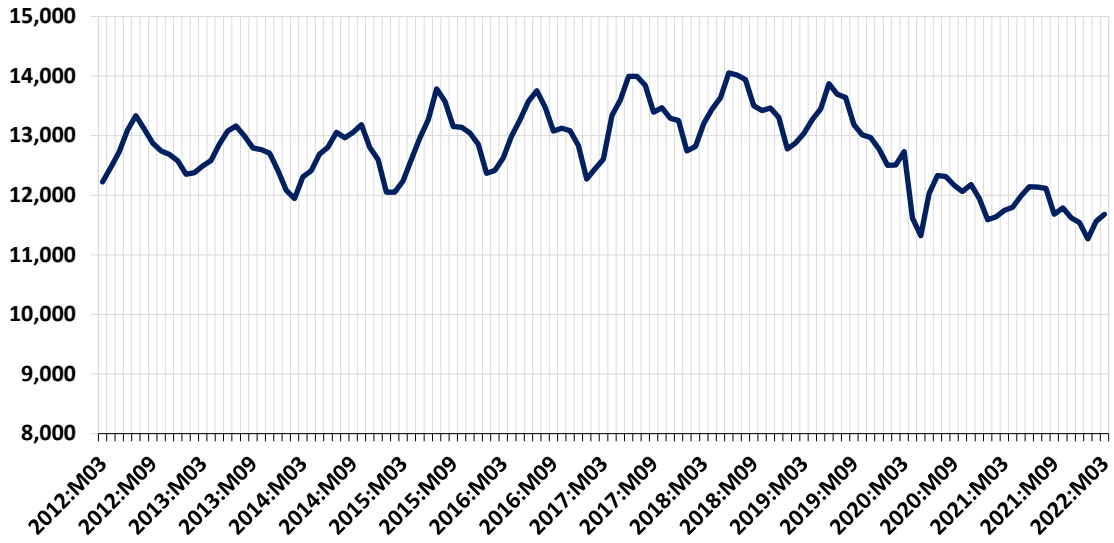
This section provides context for the economic impact assessments to follow by profiling the local economy and demographic trends of Accomack County.

ECONOMIC PROFILE

Total Employment

Figure 3 depicts the trend in total employment in Accomack County during the ten-year period from March 2012 through March 2022. With the exception of seasonal variations, employment in the county slightly increased through 2019. Then, in April 2020 total employment declined significantly due to the lockdowns imposed as a result of the COVID-19 pandemic. Employment has since rebounded but has not recovered to pre-pandemic levels. As of March 2022, total employment in the county stood at 11,679 jobs, which represents an overall decrease in employment of 4.5 percent (or 544 jobs) over the ten-year period. To put this number in perspective, over this same period, total statewide employment in Virginia increased by 8 percent.[7]

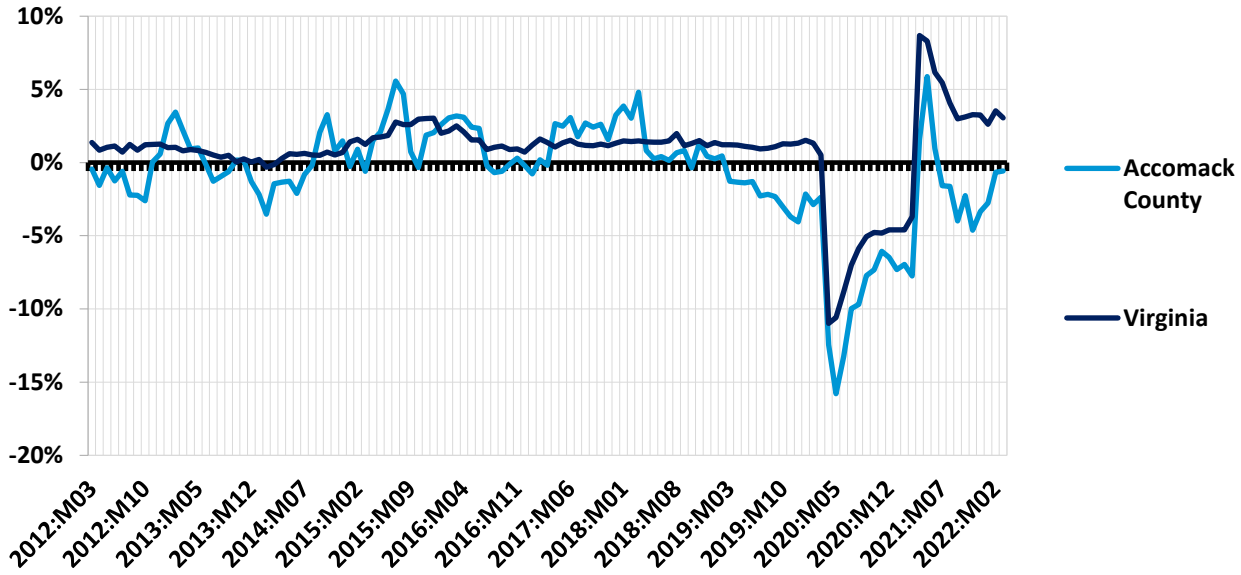
Figure 3: Total Employment in Accomack County – March 2012 to March 2022[8]



To control for seasonality and provide a point of reference, Figure 4 compares the year-over-year change in total employment in Accomack County to that of the state of Virginia over the same five-year period. Any point above the zero line in this graph indicates an increase in employment, while any point below the zero line indicates a decline in employment. As these data show, Accomack County fluctuated around the statewide average for most of the period. As of March 2022, the year-over-year change in total employment in Accomack County was minus 0.6 percent as compared to 3.1 percent statewide in Virginia.

[7] Data Source: U.S. Bureau of Labor Statistics.
[8] Data Source: U.S. Bureau of Labor Statistics.

Figure 4: Year-Over-Year Change in Total Employment – March 2012 to March 2022[9]



Employment and Wages by Industry Super Sector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 3 and 4, Figures 5 through 7 provide data on private employment and wages in Accomack County by industry super sector.

Figure 5 provides an indication of the distribution of private sector employment across industry super sectors in Accomack County in 2021. As these data indicate, the county's largest industry sector that year was Manufacturing (2,845 jobs), followed by Trade, Transportation, and Utilities (1,668 jobs), and Education and Health Services (1,301 jobs).

Figure 6 provides a similar ranking for average private sector weekly wages by industry super sector in Accomack County in 2021. As these data show, the highest-paying industry sectors that year were Professional and Business Services ($1,362 per week), Natural Resources and Mining ($1,136 per week), and Information ($1,072 per week). To provide a point of reference, the average private sector weekly wage across all industry sectors in Accomack County that year was $869 per week.

[9] Data Source: U.S. Bureau of Labor Statistics.

Figure 5: Private Employment by Industry Super Sector in Accomack County – 2021[10]

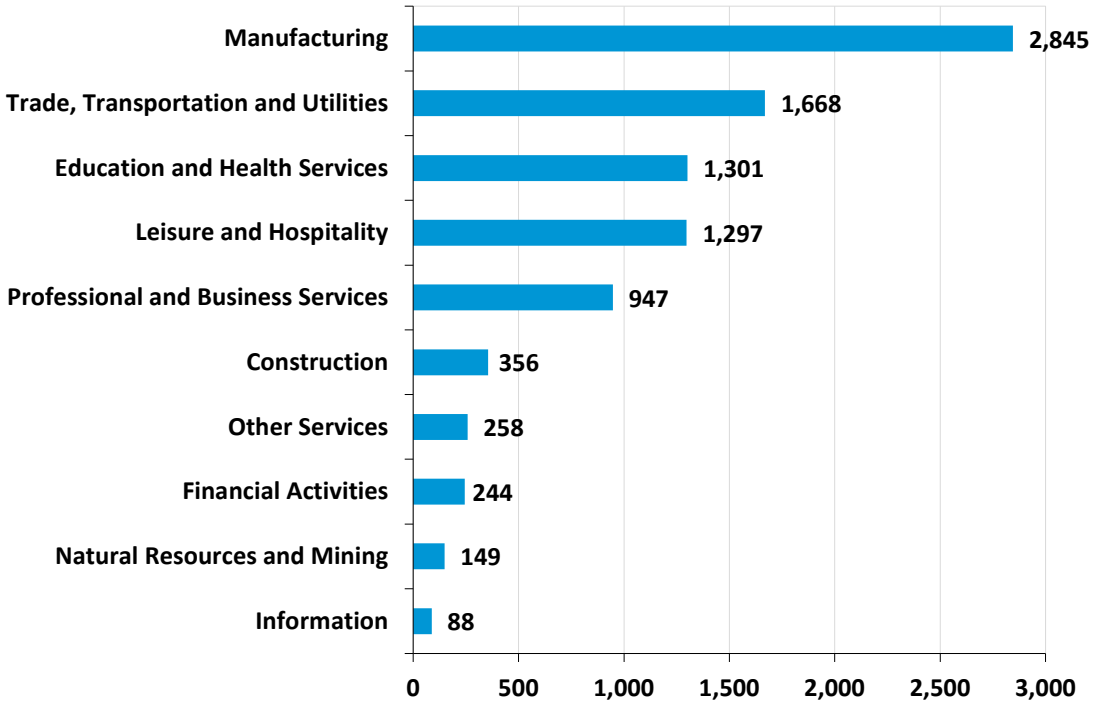
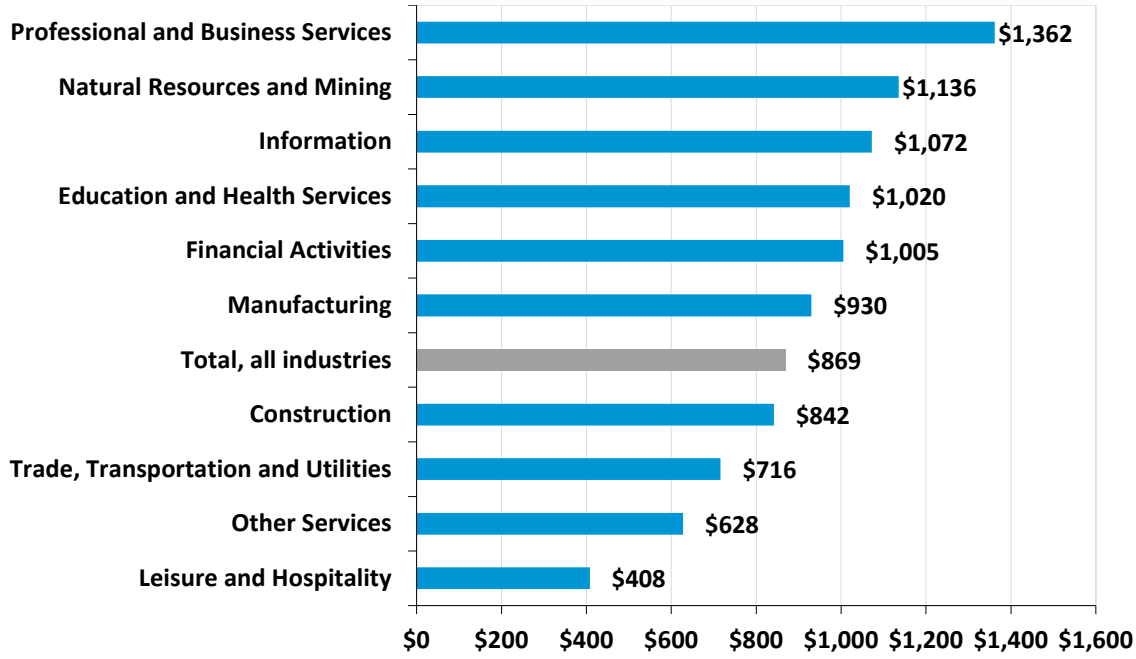


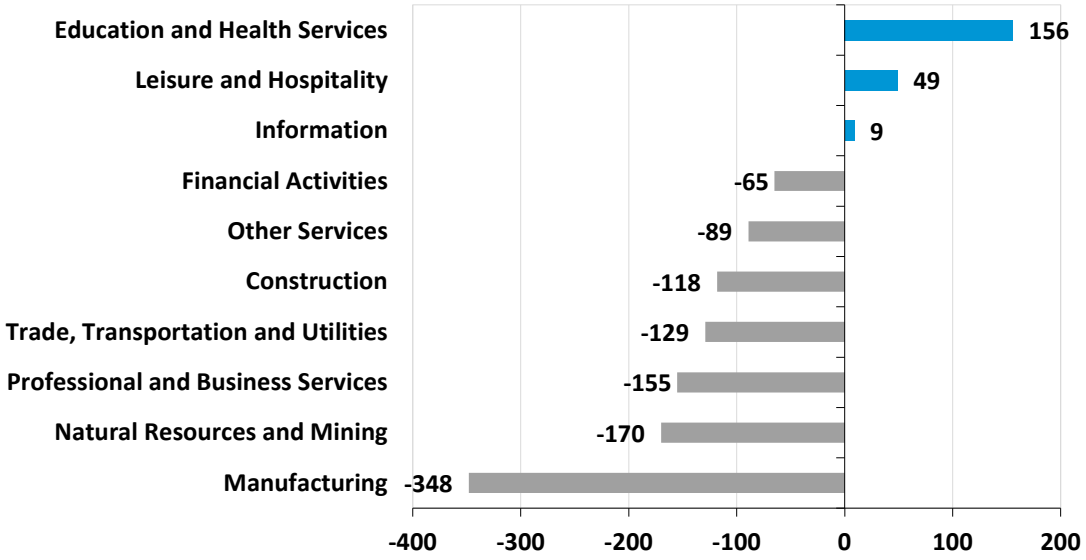
Figure 6: Average Private Weekly Wages by Industry Super Sector in Accomack County – 2021[11]



[10] Data Source: U.S. Bureau of Labor Statistics.
[11] Data Source: U.S. Bureau of Labor Statistics.

Figure 7 details the year-over-year change in private sector employment from 2011 to 2021 in Accomack County by industry super sector. Over this period, the only employment gains occurred in the Education and Health Services (up 156 jobs), Leisure and Hospitality (up 49 jobs), and Information (up 9 jobs) sectors. The largest employment losses occurred in the Manufacturing (down 348 jobs), Natural Resources and Mining (down 170 jobs), and Professional and Business Services (down 155 jobs) sectors.

Figure 7: Change in Private Employment by Industry Super Sector in Accomack County from 2011 to 2021[12]

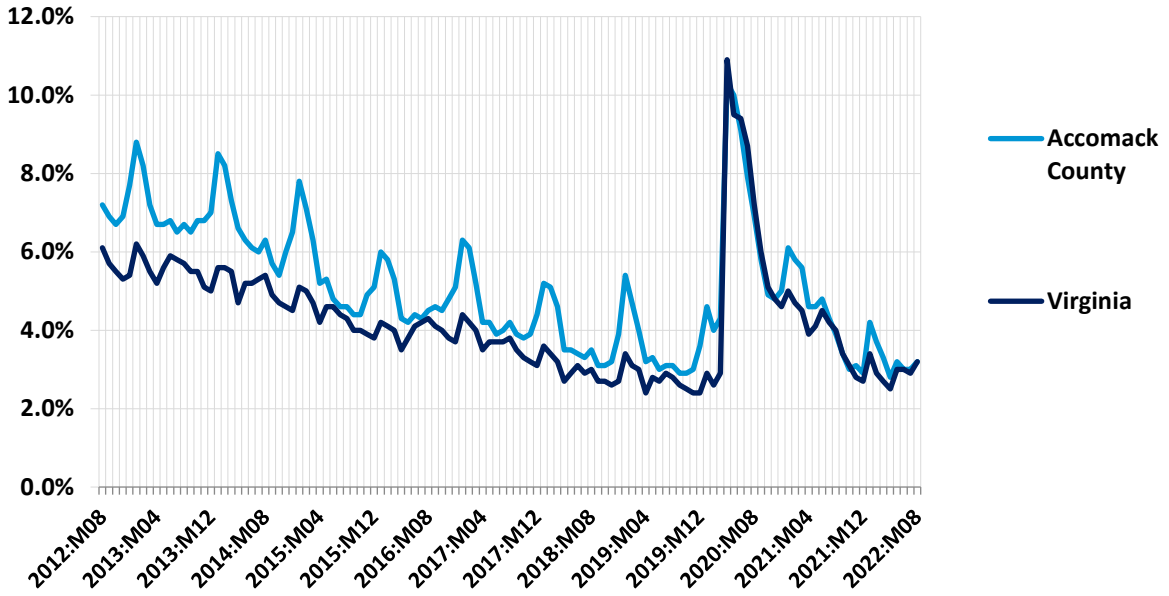


Unemployment

Figure 8 illustrates the trend in Accomack County's unemployment rate over the ten-year period from August 2012 through August 2022 and benchmarks those data against the statewide trend for Virginia. As these data show, unemployment rates in Accomack County tracked higher than the statewide average throughout the period. In April 2020 unemployment in the county and state significantly rose as a result of the labor dislocations caused by the COVID-19 pandemic. As of August 2022, unemployment stood at 3.2 percent in Accomack County compared to 3.2 percent in Virginia as a whole.

[12] Data Source: U.S. Bureau of Labor Statistics.

Figure 8: Unemployment Rate – August 2012 to August 2022[13]



Commuting

Table 1 shows the commuting rates into Accomack County in 2009 and in 2019 (the latest year available for commuting estimates). In 2009, approximately 66 percent of Accomack County employees (or 7,898 workers) resided in the county, but that percentage declined to approximately 59 percent (or 6,880 workers) by 2019. Consequently, the percentage of in-commuters increased from 35 percent (or 4,154 workers) to 41 percent (or 4,827 workers) during the period. The majority of the in-commuters (or 24 percent of total employment) into Accomack County in 2019 lived in other Virginia localities. Approximately 14 percent commuted across the border from Maryland, which is an increase over the 7 percent commuting from Maryland in 2009. The remaining 4 percent reside in other states.

Table 1: Total Employment in Accomack County by Place of Residence in 2009 and 2019[14]

	2009		2019	
	Count	Share	Count	Share
Total Employment in Accomack County	12,052	100.0%	11,707	100.0%
Employees Living in Accomack County	7,898	65.5%	6,880	58.8%
Employed in Accomack Living Elsewhere (Commuters)	4,154	34.5%	4,827	41.2%
Commuters Living in another Virginia County	*2,992*	*24.8%*	*2,768*	*23.6%*
Commuters Living in Maryland	*815*	*6.8%*	*1,633*	*13.9%*
Commuters Living in another State	*347*	*2.9%*	*426*	*3.6%*

**Totals may not sum due to rounding.*

[13] Data Source: U.S. Bureau of Labor Statistics.
[14] Data Sources: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics.

DEMOGRAPHIC PROFILE

Population

Figure 9 depicts the trend in Accomack County's total population (dark blue line) between 2001 and 2021 and benchmarks those data against the state of Virginia (light blue line). As these data show, the county's population steadily decreased through 2009 and then it began to level off. The population in the county has remained relatively flat since 2010. Over the twenty-year period, the county's total population decreased by 4,645 or 12 percent. To put this number in perspective, over this same period, the total population of the state of Virginia increased by 1.4 million or 20 percent.[15]

Figure 9: Population over Time – Accomack County and Virginia (2001 – 2021)[16]

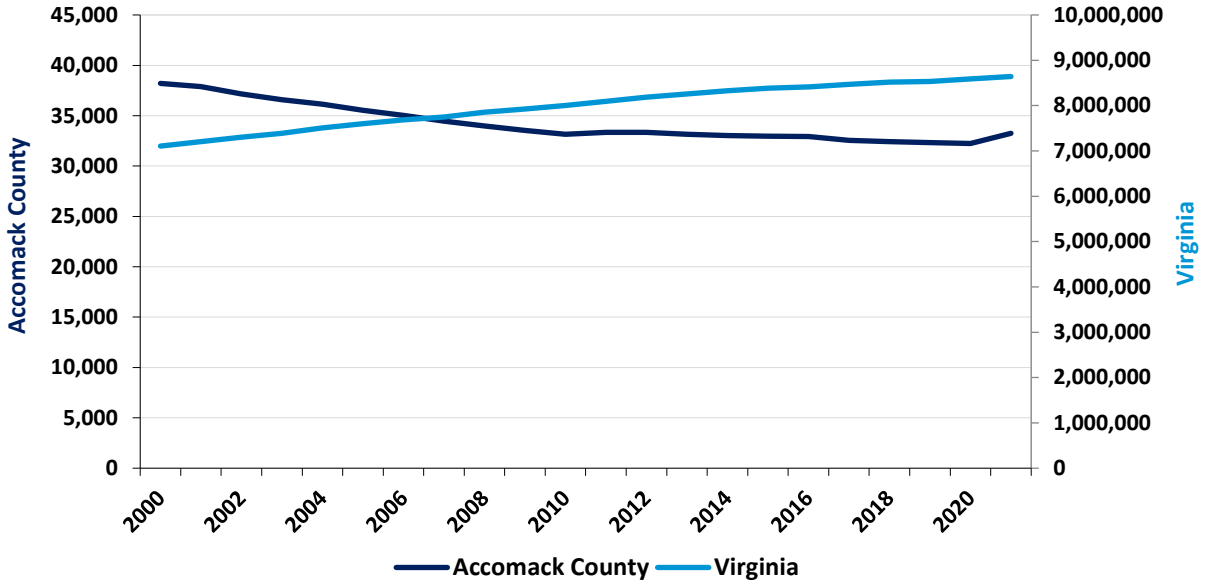


Figure 10 depicts the population by age in Accomack County between 2011 and 2021. As these data show, both the under 18 and 18 to 64 age categories generally declined over the period, while the above 64 age category increased. Although it bears note that there was an uptick in the 18 to 64 age category in 2021, which would have been consistent with the general migration out of the urban centers that occurred around that time in response to the COVID-19 lockdowns.

[15] Data Source: U.S. Census Bureau, Annual Population Estimates.
[16] Data Source: U.S. Census Bureau, Annual Population Estimates.

Figure 10: Population by Age over Time – Accomack County (2011 – 2021)[17]

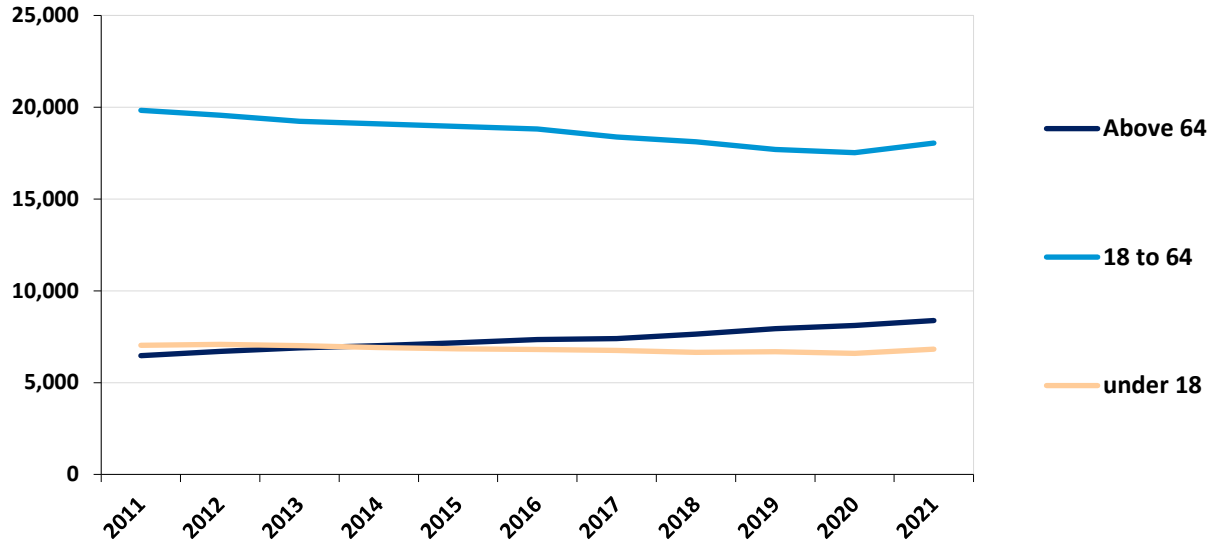


Table 2 provides more detail on these changes and benchmarks them against state-level data over the same period. As these data indicate, between 2011 and 2021 the under-18 population in Accomack County declined by 3 percent as compared to a 3 percent increase at the state level, while the 18 to 64 population declined by 9 percent in contrast to a 2 percent increase at the state level. The over-64 population increased In both Accomack County and statewide over the period, growing by 30 percent in the county and by 39 percent in Virginia.

Table 2: Change in Population by Age Group in Virginia and Accomack County between 2011 and 2021[18]

	Virginia	Accomack County
Under 18 years	3%	-3%
18 to 64 years	2%	-9%
Over 64 years	39%	30%

Housing

According to a recent analysis by the Accomack-Northampton Planning District Commission, vacant housing units are more common in Accomack County than is typical for the state as a whole. Where housing vacancy rates are 34 percent in Accomack County, statewide in Virginia that number is only 8 percent. Much of that difference is attributable to the high incidence of vacation homes in the county (61 percent of vacant homes in Accomack County are only used seasonally) and the fact that nearly a

[17] Data Source: U.S. Census Bureau, Annual Population Estimates.
[18] Data Source: U.S. Census Bureau, Annual Population Estimates.

third of vacant homes in the county are uninhabitable or being used for non-residential purposes (*e.g.*, storage).[19]

Another significant characteristic of the housing stock in Accomack County is that it tends to be older. Where 51 percent of owner-occupied housing in Accomack County was constructed before 1980, statewide the comparable number is only 44 percent. In addition, single-family detached homes are more prevalent in Accomack County, while apartments and townhomes are more scarce. Single-family detached homes comprise 88 percent of owner-occupied housing in Accomack County compared to 80 percent statewide, while apartments and townhomes comprise less than one percent of owner-occupied housing in Accomack County compared to 16 percent statewide.[20]

Perhaps most importantly, the Accomack-Northampton Planning District Commission's housing study identified significant housing gaps for households in the lowest and highest income categories in Accomack County. According to that analysis, households that were below 30 percent of the median income for the area faced a shortage of 701 income-appropriate housing units, while households that were at 81 percent or more of the median income for the area faced a shortage of 1,535 income-appropriate housing units.[21]

Educational Attainment & Schools

Based on 2020 Census data from the American Community Survey, 4,896 students are enrolled in kindergarten to grade 12 in Accomack County schools. This accounts for about 90 percent of the population of those in Accomack County between the ages of 5 and 19.[22]

The countywide average expenditure per pupil is $12,207, which is 14 percent below the statewide average of $14,206 per pupil. Although the Accomack County pupil-to-teacher ratio for grades kindergarten through seventh grade is 11.78, which falls below Virginia's ratio of 12.15, the county's ratio for grade levels eighth through twelfth of 12.88 is slightly higher than the statewide ratio of 12.52.[23]

About 83 percent of the adult population (age 25 and older) in Accomack County have graduated high school.[24] The percent of students that graduated on time in Accomack County is 84 percent, which trails behind the Virginia on-time graduation rate of 92 percent. The county's high school dropout rate of 8.6 percent is higher than the state of Virginia's average high school dropout rate of 5.2 percent.[25]

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[19] Data Sources: Accomack-Northampton Planning District Commission, *Eastern Shore of Virginia Regional Housing Study*, March 2022 and U.S. Census Bureau, American Community Survey.
[20] Data Sources: Accomack-Northampton Planning District Commission, *Eastern Shore of Virginia Regional Housing Study*, March 2022 and U.S. Census Bureau, American Community Survey.
[21] Data Sources: Accomack-Northampton Planning District Commission, *Eastern Shore of Virginia Regional Housing Study*, March 2022 and U.S. Census Bureau, American Community Survey.
[22] Data Source: U.S. Census Bureau, Annual Population Estimates.
[23] Data Source: Virginia Department of Education, Superintendent's Annual Report 2021-2022.
[24] Data Source: U.S. Census Bureau, American Community Survey.
[25] Data Source: Virginia Department of Education, Detailed State, Division & School Cohort Reports, Class of 2022.

Approximately 20 percent of the county's adult population (age 25 and older) have continued their studies to obtain a bachelor's degree or higher. In comparison, Virginia as a whole sits at about double that with 40 percent of adults having a bachelor's degree or higher.[26]

Income Level & Poverty

Accomack County has a median household income of $46,178. This is significantly lower than the median household income in the state of Virginia which is $76,398. Nonfamily households in the county have the lowest median income at $29,261. Over 17 percent of the county's population between the ages of 18 and 64 are below the poverty level, while in the state of Virginia, only about 10 percent of the same age category fall below the poverty level. With over 24 percent living under the poverty level, the age group of 18 to 34 years old has the highest percentage of its population living under the poverty among adults in Accomack County.[27]

[26] Data Source: U.S. Census Bureau, American Community Survey.
[27] Data Source: U.S. Census Bureau, American Community Survey.

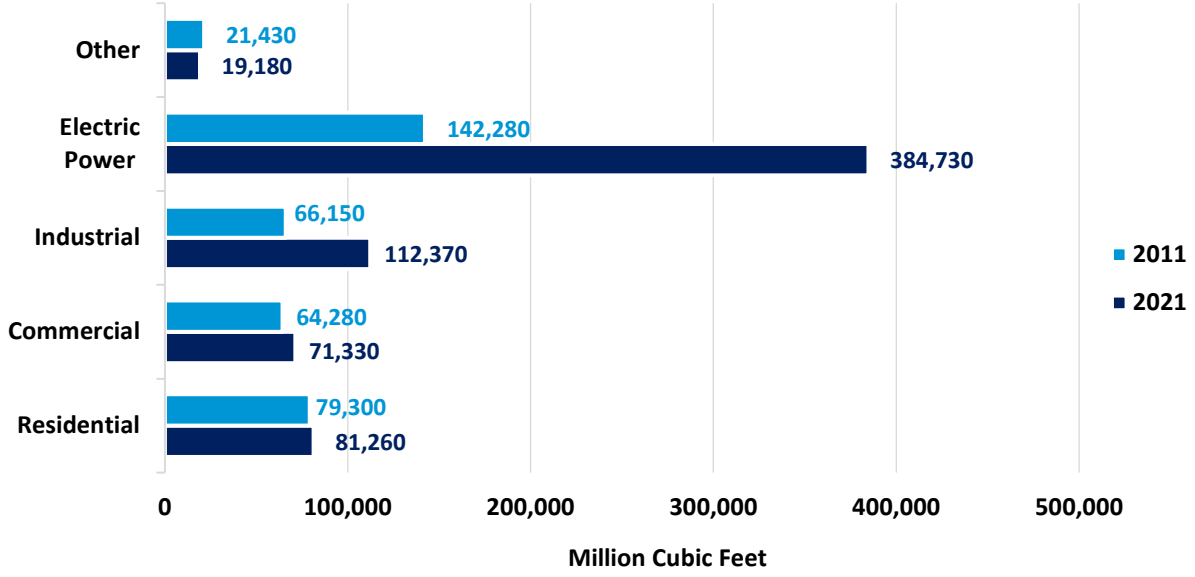
Natural Gas Overview

NATURAL GAS IN VIRGINIA

Consumption of natural gas in Virginia has increased by almost 80 percent over the last 10 years to approximately 668,880 million cubic feet (MMcf). The most significant increase is attributable to the use of natural gas for electricity generation, which has become Virginia's largest source of electricity. As shown in Figure 11 in 2021, electric power generation used 384,730 MMcf (or 58 percent) of the total natural gas consumed in the state.

Between 2011 and 2021, industrial users in Virginia increased their consumption of natural gas by 70 percent to approximately 112,370 MMcf compared to a nationwide average increase of 19 percent. Virginia's industrial users now account for 17 percent of statewide natural gas consumption. Residential and commercial customers in Virginia respectively account for approximately 12 percent (or 81,260 MMcf) and 11 percent (or 71,300 MMcf) of total natural gas consumption.[28]

Figure 11: Natural Gas Consumption in Virginia by Type of User in 2011 and 2021 (in million cubit feet)[29]



As shown in Table 3, statewide approximately one-third of all households heat their homes using natural gas while the majority (55 percent) rely on electricity. In Accomack County, a comparable proportion of households (57 percent) are heated using electricity, but the lack of natural gas means that 21 percent

[28] Data Source: U.S. Energy Information Administration.
[29] Data Source: U.S. Energy Information Administration. Other includes lease fuel, pipeline and distribution and vehicle fuel consumption.

of households rely on bottled, tank, or liquefied petroleum (LP) gas and 18 percent of households use other sources such as fuel oil and kerosene.[30]

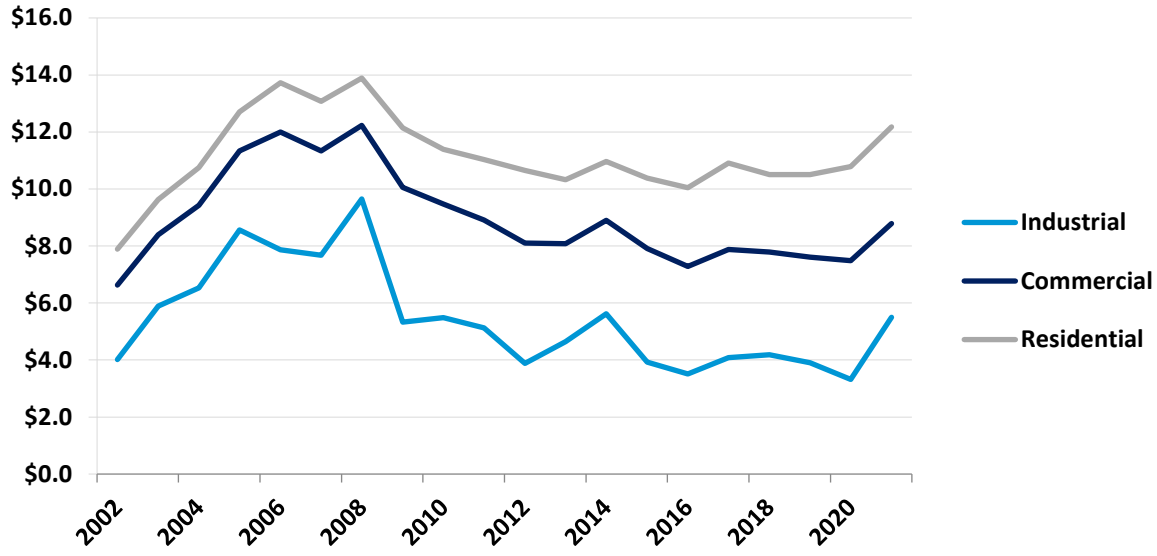
Table 3: Fuel Sources for Heat and Water for Homes in Virginia and Accomack County (Percent of Total Households)[31]

	Virginia	Accomack County
Natural Gas (Utility)	33%	1%
Bottled, Tank, or LP Gas	4%	21%
Electricity	55%	57%
Fuel Oil, Kerosene, etc.	4%	18%
Other Fuel	3%	3%

NATURAL GAS AND OTHER FUEL PRICES

Figure 12 displays the price of natural gas in the U.S. over the last 20 years. After a steep increase in the early 2000s prices declined and stabilized by 2010. Prices began to rise again in 2021. Figure 12 also shows that the price of natural gas varies by type of customer. Larger, industrial consumers benefit from lower prices than commercial and residential users.

Figure 12: Natural Gas Prices by Customer Type in the United States over Time (in Dollars per Thousand Cubic Feet)[32]

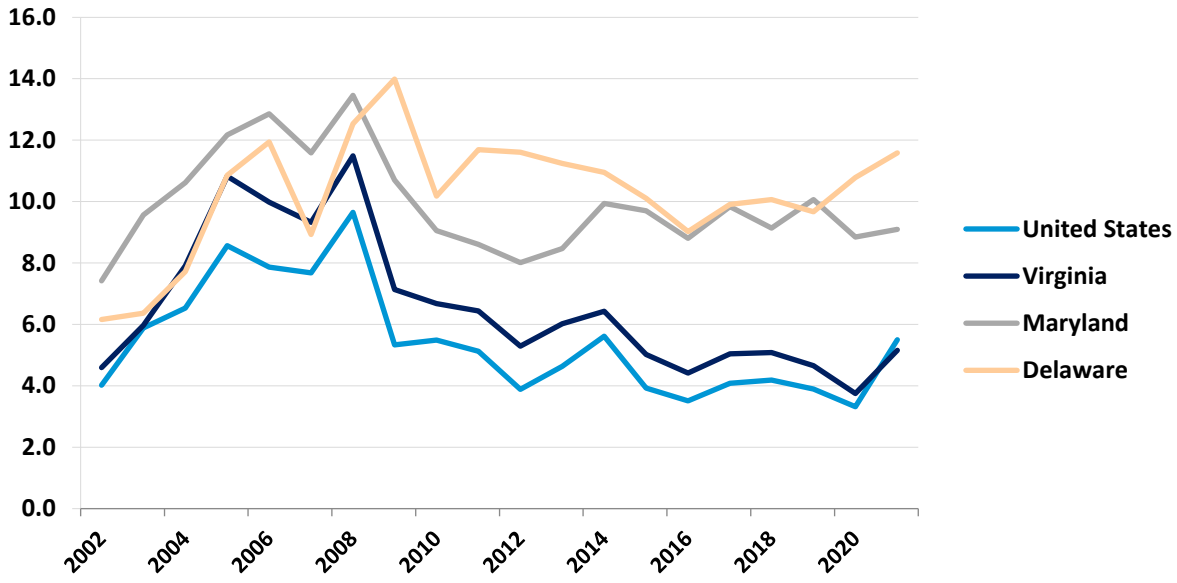


[30] Data Source: U.S. Census Bureau, American Community Survey.
[31] Data Source: U.S. Census Bureau, American Community Survey.
[32] Data Source: U.S. Energy Information Administration. Please note that 2021 is the latest annual data available.

Prices also vary by location. Figure 13 portrays the natural gas prices for industrial users in the United States, in Virginia, Maryland, and in Delaware over the last 20 years. Prices in Virginia have followed the national trends but have stayed slightly above the U.S. average, with the gap decreasing recently. Prices in Maryland and Delaware have been above the Virginia and national averages and the gap has widened in recent years. Average Delaware prices in 2021 were twice the U.S. average while Maryland prices were about 65 percent above the national and Virginia prices.

Figure 14 compares and contrasts the average industrial customer and wholesale prices for one million British thermal units (Btu)[33] of natural gas, propane, #2 heating fuel, and electricity over the last five years. As these data show, prices for natural gas and electricity remained stable until they increased in 2021. Prices for propane and #2 heating fuel declined early in the period but their prices also significantly increased in 2021. Despite the recent price increases, natural gas remains the lowest cost of the four types of fuels, followed by propane, #2 heating fuel, and electricity.

Figure 13: Industrial Natural Gas Customer Prices over Time by Region (in Dollars per Thousand Cubic feet)[34]



[33] The price of each fuel source was calculated based on its heat content because each fuel source reports price estimates in its own unit. The formula used for these calculations is [(fuel price per unit) divided by (fuel heat content per unit) multiplied by 1 million]. The U.S. Energy Information Administration's conversion calculator was used to determine the appropriate heat content for each fuel source.

[34] Data Source: U.S. Energy Information Administration.

Figure 14: U.S. Average Industrial Fuel Source Prices over Time (in $ per 1 million Btu)[35]

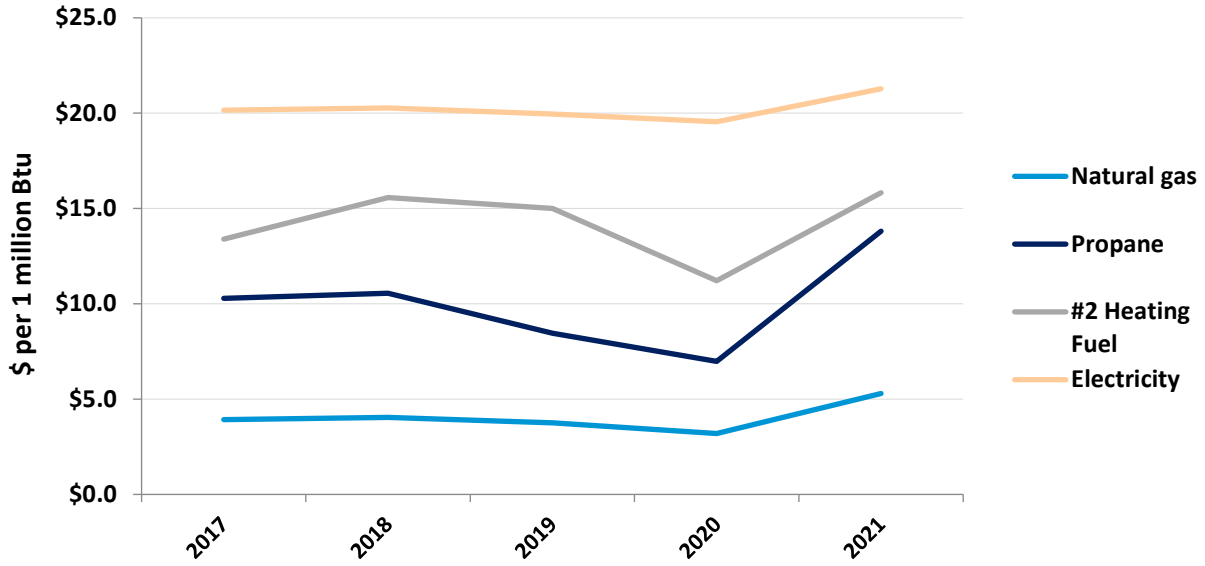


Table 4 details the cost per 1 million Btu for the four heat sources by type of consumer. As these data demonstrate, natural gas is the lowest cost option for all types of customers, offering prices that are on average 47 percent to 67 percent below the cost of #2 heating oil and propane and approximately 71 percent to 75 percent below the cost of electric heat.

Table 4: U.S. Average Prices Per 1 Million British Thermal Units (2021 Average Rates)[36]

	Industrial Price[37]	% Natural Gas Savings	Commercial Price[38]	% Natural Gas Savings	Residential Price[39]	% Natural Gas Savings
Natural Gas	$5.29		$8.46		$11.72	
# 2 Heating Oil	$15.83	67%	$15.83	47%	$22.01	47%
Electricity	$21.28	75%	$33.03	74%	$40.21	71%
Propane	$13.81	62%	$13.81	39%	$27.13	57%

[35] Data Source: U.S. Energy Information Administration. Please note that 2021 is the latest annual data available.
[36] Data Source: U.S. Energy Information Administration. Average annual fuel prices for propane and #2 heating oil calculated based on 6-month data available. Average prices shown are calculated based on annual average fuel prices for each fuel type divided by the fuel's heat content per unit in Btu and multiplied by 1 million.
[37] Data Source: U.S. Energy Information Administration. Industrial prices used for electric and natural gas prices and wholesale prices for propane and #2 heating oil.
[38] Data Source: U.S. Energy Information Administration. Commercial prices used for electric and natural gas prices and wholesale prices for propane and #2 heating oil.
[39] Data Source: U.S. Energy Information Administration. Residential prices used.

Economic Development Potential

STAKEHOLDER INTERVIEWS

Mangum Economics conducted 21 in-person and virtual interviews with 35 stakeholders representing the following companies and entities: Accomack County, Accomack County Board of Supervisors, Accomack County Planning Commission, Accomack-Northampton Planning District Commission, Chesapeake Utilities Corporation, Coastline Chemical, Inc. / SharpTech USA, Commonwealth Chesapeake, Eastern Shore of Virginia Chamber of Commerce, M3 Synergies, NASA Wallops Flight Facility, Perdue, Rocket Lab, Somerset County Economic Development Commission, SVN Miller Commercial Real Estate, Tyson, Virginia Economic Development Partnership, Virginia House of Delegates (Delegate Bloxom), Virginia Space, and Wallops Research Park Council.

In each interview, the purpose of the study was explained, and the stakeholders were asked to elaborate on the economic development potential they could see as a result of the extension of the natural gas pipeline into Accomack County. The interviewees were also provided the opportunity to share information on the general trends and issues faced by Accomack County.

Several major themes emerged through these interviews:

- The general expectation is that the Perdue and Tyson chicken processing plants, and the NASA Wallops Flight Facility and its tenants would comprise the anchor tenants to support the extension of the natural gas pipeline into Accomack County. It is anticipated that once piped natural gas is available, other existing employers within the county will take advantage of that opportunity to reduce their utility costs and it will also open the door to additional private development.
- A large number of those interviewed saw the extension of piped natural gas to Accomack County as critical to securing the continued operation of the Perdue and Tyson chicken processing plants. Together, these plants directly account for approximately one-third of all private employment in Accomack County and indirectly support many poultry operations, grain producers, and other businesses in the county. Both plants use propane as a main fuel source and purchase millions of gallons each year. These large quantities of fuel are delivered to the plants by truck. The higher cost of propane compared to piped natural gas places these plants at a significant competitive disadvantage relative to other processing facilities across the country where piped natural gas is available.
- In addition to the chicken processing plants, those interviewed also identified several other existing employers within Accomack County that would benefit from access to piped natural gas if it were available. Among those identified were the: Commonwealth Chesapeake power station, an intermittent “peak load” generation facility; Coastline Chemical, a company that blends and packages anti-freeze; SharpTech USA, a company that produces glycol and glycol-based products; and Accomack County public schools.

- With respect to the additional economic development that could result from the extension of piped natural gas to Accomack County, many of those interviewed pointed to the ongoing expansion of commercial space activity at the NASA Wallops Flight Facility as a potentially transformative economic opportunity for the county. Rocket Lab recently selected Wallops Island as the launch site for its new Neutron rocket and announced that it would be bringing up to 250 professional and technical jobs to Accomack County to support manufacturing and operations facilities that will be part of the Neutron rocket program. Like many newer rocket designs, the Neutron rocket uses liquid methane as a propellant. Extension of piped natural gas to Accomack County could be instrumental in Rocket Lab's development plans as well as those of other potential commercial aerospace firms.
- In addition to the aerospace industry, those interviewed also identified manufacturing, warehousing and distribution, controlled environment agriculture, and residential development as opportunities for additional economic growth that could result from the extension of piped natural gas to Accomack County.
- Several of those interviewed also referenced the growth in economic activity that occurred in the Maryland counties, and particularly Somerset County, after the pipeline was extended south from Delaware as an example of what could occur if the pipeline is further extended across the Virginia state line into Accomack County.
- Although all of those interviewed were of the opinion that the extension of the natural gas pipeline into Accomack County would be a catalyst for growth, some also mentioned other challenges faced by the county that could be limiting factors. Foremost among those were a lack of housing, a lack of access to broadband, and workforce limitations, particularly with respect to neighboring jurisdictions in Maryland.

EXISTING ANCHOR TENANTS

Perdue & Tyson

Perdue and Tyson constitute essential businesses to Accomack County – for economic and fiscal reasons. Combined, these two facilities employ approximately 2,900 workers between their processing and rendering plants.[40] To put this number in perspective, these facilities are not only the two largest private sector employers in the county, but they also directly account for approximately one-third of the county's total private sector employment and approximately one-quarter of the total employment in the county.

Both facilities also make a large fiscal contribution to the county. Perdue and Tyson are among the "Top 10 Principal Taxpayers" in Accomack County. Between 2011 and 2021, these two businesses fluctuated between being the top 3rd to 7th largest taxpayers in the county. Combined, their total assessed valuation in 2021 amounted to over $45 million or more than 5 percent of the county's total commercial

[40] Data Source: Stakeholder interviews.

real property. Their combined fiscal year 2021 tax liability was equivalent to approximately 9 percent of the county's local education funding.[41]

Additionally, Perdue and Tyson support a sizeable poultry supplier network within the county. This network consists of approximately 62 agricultural poultry operations that are responsible for a total market value of approximately $112.0 million in poultry products sold. This amounts to approximately 69 percent of the county's total agricultural production and ranks Accomack County as 4th largest producer in the state and 127th largest in the nation.[42] Employment in the poultry and egg production sector, which consists of owners and employees, is approximately 240 individuals.[43]

Both facilities transitioned from using fuel oil to propane as a main fuel source in recent years. In combination, these plants purchase millions of gallons of propane each year, which are delivered by truck. Although access to piped natural gas is unlikely to provide expansion opportunities, it would enable both facilities to reduce their utility costs, which would enable them to stay competitive with other chicken processing facilities across the country where piped natural gas is available.[44] In this context, it is important to remember that these plants are mainstay employers in Accomack County. Had even one of these plants closed in 2021, even after accounting for in-commuting from other jurisdictions the county's unemployment rate that year would have been approximately 10.0 percent as opposed to the 4.3 percent it actually experienced, and if both plants had closed the unemployment rate would have been approximately 23.5 percent.[45]

NASA

The NASA Wallops Flight Facility in Accomack County serves as a test center for field testing space and aeronautical vehicles and associated technologies. It has been described as a "wind tunnel in the sky." In addition to the NASA facility itself, the NASA Wallops Flight Facility is home to several government and private sector tenants. Those tenants include the U.S. Navy, the U.S. Coast Guard, the National Oceanic and Atmospheric Administration, Northrop Grumman, the Virginia Commercial Space Flight Authority (more commonly known as Virginia Space), and Rocket Lab. Collectively, these entities employ approximately 2,400 government and private sector workers on-site.

The NASA Wallops Flight Facility currently uses propane for heating. The NASA Wallops Flight Facility is the only federal facility that uses propane for this purpose – all others use either natural gas or some other fuel source.[46] The propane is delivered by truck and stored on site. Piped natural gas would enable the NASA Wallops Flight Facility to reduce its operating costs due to the lower cost of piped natural gas. In addition, natural gas would be more reliable because piped natural gas supplies are less likely to be negatively impacted by severe weather than are truck deliveries of propone gas.

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[41] Data Source: Accomack County Commissioner of Revenue and Virginia Department of Education.
[42] Data Source: U.S. Department of Agriculture, *2017 Census of Agriculture*.
[43] IMPLAN Group, LLC.
[44] Data Source: Stakeholder interviews.
[45] Data Source: Stakeholder interviews and U.S. Bureau of Labor Statistics.
[46] Data Source: Stakeholder interviews.

POTENTIAL DEVELOPMENT OPPORTUNITIES

Areas of Immediate Interest

This portion of the section highlights some of the more immediate economic development opportunities that could be positively impacted by the extension of piped natural gas into Accomack County.

Virginia Space and Rocket Lab

Virginia Space is based at the NASA Wallops Flight Facility. Virginia Space was created by the Virginia General Assembly in 1995 for the purpose of promoting commercial space activity and aerospace research in Virginia. Virginia Space owns and operates the Mid-Atlantic Regional Spaceport (MARS). The MARS facility is one of only four licensed commercial spaceports in North America and one of only two on the east coast. MARS includes three launch pads, an unmanned aircraft systems airfield, a payload processing facility, and an integration and control facility. The primary purpose of the MARS facility is to provide commercial access for small and mid-class launch vehicles.

Rocket Lab specializes in providing launch services, spacecraft, satellite components, and on-orbit management. Rocket Lab is headquartered in Long Beach, California. It operates advanced manufacturing and mission operations centers in Colorado, Maryland, New Mexico, New Zealand, Toronto, and at Wallops Island in Virginia. Virginia Space's MARS facility is one of two launch sites used by Rocket Lab for its Electron rocket, and the company's only dedicated launch site in North America. The Electron is a reusable rocket used to launch small satellites into low earth orbit and one of the most frequently launched small rockets. Rocket Lab's first launch of an Electron rocket from MARS is planned for December 2022.

The Neutron rocket will be Rocket Lab's latest addition to the market. It is significantly larger than the Electron and will be capable of carrying larger payloads and could even be used for manned flight. In addition, like many newer rocket designs, it will use liquid methane as a propellant instead of the older RP-1 propellant that is comprised of highly refined kerosene. Rocket Lab has selected Wallops Island as the location of its Neutron Production Complex. This complex will be adjacent to the NASA Wallops Flight Facility and will include a launch control center, as well as a rocket production, assembly, and integration facility. The Neutron Production Complex is expected to employ up to 250 engineers, technicians, and other staff. It is anticipated that the first Neutron rocket launch from the MARS facility will occur in 2024.

When assessing the likely economic development potential provided by Virginia Space and Rocket Lab, it is important to realize that commercial spaceflight, particularly as it relates to low earth orbit satellites, is a rapidly growing industry. According to a recently released report by ABI Research, the global market for low earth orbit satellites is expected to grow from $3.5 billion in 2021 to $9.0 billion in 2026, with much of that growth occurring in North America.[47]

[47] Data Source: ABI Research, "Low Earth Orbit Satellite Services and Outlook," November 2022.

There are several reasons to believe that Virginia Space is in a unique position to compete for a share of that growth.

- As mentioned earlier, Virginia Space's MARS facility is one of only four licensed commercial spaceports in North America and one of only two on the east coast.
- The construction of Rocket Lab's Neutron Production Complex at Wallops Island provides a starting point that could lead to subsequent expansion and serve as a magnet for attracting other aerospace industries and suppliers.
- The large size of rocket components makes it advantageous to place manufacturing facilities in close proximity to launch facilities to minimize transportation issues. This is likely one of the reasons Rocket Lab is locating its production, assembly, and integration facility for the Neutron rocket within a very short distance of the MARS facility where the rocket will be launched. This same equation could hold true for other aerospace firms using the MARS launch facility as well.

Importantly, however, as the Neutron rocket's use of methane as a propellant demonstrates, there is an ongoing trend in the aerospace industry toward employing methane as a replacement for the older RP-1 rocket propellant. As this trend continues, the availability of piped natural gas (methane) at the NASA Wallops Flight Facility may become that much more important as a tool for encouraging further development of the commercial aerospace industry at Wallops Island.

Industrial Development

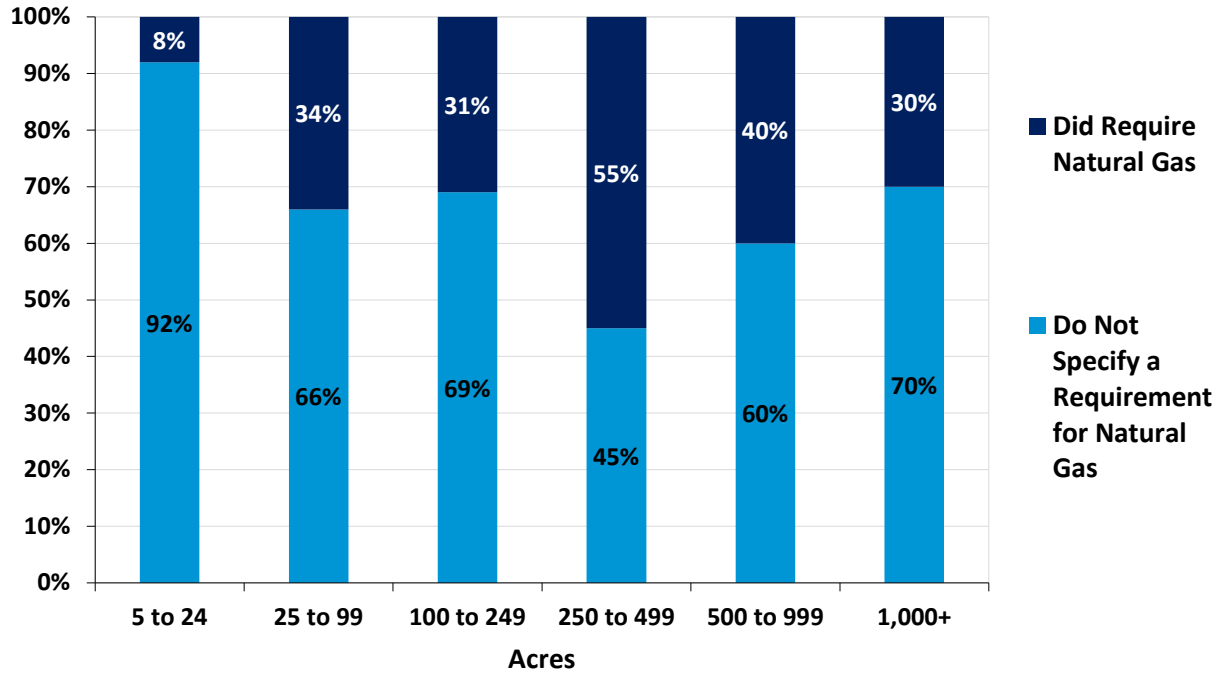
As shown earlier in the economic profile portion of the *Baseline Profile of Accomack County* section, the manufacturing sector is, and traditionally has been, the major employment sector in the county, accounting for 31 percent of total private sector employment in 2021. In addition, manufacturing is one of the higher-paying sectors in the county. Of the major private employment sectors (*i.e.*, those accounting for 10 percent or more of private sector employment) only Professional and Business Services (10 percent of total county private sector employment) and Education and Health Services (14 percent of total county private sector employment) pay higher wages (*see* Figures 5 and 6).

Given this background, it was not surprising that many of those participating in the stakeholder interviews discussed the positive impact that the extension of the natural gas pipeline into Accomack County could have on recruiting additional manufacturers into the county, particularly with respect to food processing plants. Those observations are further bolstered by data made available by the Virginia Economic Development Partnership (VEDP) which show that in the last five years 64 percent of VEDP's economic development prospects that expressed interest in Accomack County were manufacturers, and 55 percent of that 64 percent were food processing plants.

Other data made available by VEDP more generally shed light on the importance of piped natural gas as a recruitment tool in industrial development. Figure 15 breaks down the 240 requests for information on industrial development sites in Virginia that VEDP received between July 2019 and January 2022 according to those that expressly stated a requirement for natural gas and those that did not. As these

data show, for industrial development prospects that were looking at sites of 25 acres or more, typically a third or more expressly listed the availability of natural gas as a requirement.

Figure 15: Virginia Economic Development Partnership Industrial Site Requests including Natural Gas (July 2019 – January 2022)[48]



Residential Development

Another opportunity that was mentioned in the stakeholder interviews was that the extension of piped natural gas into Accomack County could aid in the development of much-needed housing, particularly suburban developments that would be attractive to middle-class and upper-middle-class workers. As shown earlier in the economic profile portion of the *Baseline Profile of Accomack County* section, an unusually large proportion of individuals working in Accomack County commute in from other localities. In 2019, 41 percent of individuals working in Accomack County commuted to work from another locality, with 18 percent of that 41 percent commuting in from another state. Moreover, those figures have increased over time. Ten years earlier in 2009, only 35 percent of individuals working in Accomack County commuted to work from another locality, and only 10 percent commuted to work from another state (*see* Table 1).

Those commuting patterns are also consistent with the findings of the Accomack-Northampton Planning District Commission's recent housing study (discussed earlier in the demographic profile portion of the *Baseline Profile of Accomack County* section) that showed significant housing gaps for households in the county's lowest and highest income categories. According to that analysis, households below 30 percent

[48] Data Source: Virginia Economic Development Partnership.

of the median income for the area face a shortage of 701 housing units, while households at 81 percent or more of the median income for the area face a shortage of 1,535 housing units.[49]
Extending piped natural gas into Accomack County could aid in alleviating these housing shortages because it would provide housing developers with a more modern and attractive option for home heat and water. As shown earlier in Table 3 of the *Natural Gas Overview* section, statewide in Virginia natural gas is second only to electricity as a fuel source for home heat and water. In fact, overall, households and the real estate industry are by far the largest demanders of natural gas in Virginia and nationwide.[50] In contrast, 39 percent of homes in Accomack County still use propane or fuel oil for heat and water, as opposed to only 8 percent statewide.

Importantly, enhanced residential development would expand the capacity of the local workforce, thereby encouraging additional development in other sectors, as well as preventing the loss of revenue to the county that occurs when workers employed in Accomack go home to spend their wages in other localities and other states.

Maryland – A Real-World Example

Multiple individuals who participated in the stakeholder interviews mentioned the accelerated development that Maryland counties experienced when piped natural gas was extended into their communities as an example of what could be expected in Accomack County. One example of this was Lidl's construction of a regional headquarters and distribution center in Cecil County, Maryland that involved a $100 million investment and provided 200 jobs.[51] That facility opened in 2020 and it is generally acknowledged to have been made possible by Chesapeake Utilities' 2017 Expansion Project (described more fully in the earlier *Natural Gas Deployment on the Delmarva Peninsula* section) that made natural gas available in Cecil County.

An even closer and more recent example is Somerset County, Maryland. Somerset County is immediately northwest of Accomack County across the Virginia/Maryland state line. And in addition to being in close proximity, Somerset County is very similar to Accomack County in many ways.

Both counties:

- Have similarly sized populations (*i.e.*, 33,246 in Accomack County and 24,584 in Somerset County).[52]

[49] Data Sources: Accomack-Northampton Planning District Commission, *Eastern Shore of Virginia Regional Housing Study*, March 2022and U.S. Department of Housing and Urban Development, Comprehensive Housing Affordability Strategy.
[50] Data Source: IMPLAN.
[51] Data Source: Office of Maryland Governor Larry Hogan. Governor Larry Hogan - Official Website for the Governor of Maryland.
[52] Data Source: U.S. Census Bureau, Annual Population Estimates.

- Are experiencing declining populations (*i.e.*, 0.5 percent decline in Accomack County's population between 2020 and 2021, and 0.1 percent decline in Somerset County's population).[53]
- Are rural communities (*i.e.*, Accomack County has a population density of 74.4 persons per square mile vs. 218.6 statewide in Virginia, and Somerset County has a population density of 77.0 persons per square mile vs. 636.1 statewide in Maryland).[54]
- Are less affluent (*i.e.*, 17.6 percent poverty rate in Accomack County vs. 10.2 percent statewide in Virginia, and 22.2 percent poverty rate in Somerset County vs. 10.3 percent statewide in Maryland).[55]
- Have lower educational attainment rates (*i.e.*, 19.7 percent bachelor's degree or higher educational attainment in Accomack County vs. 39.5 percent statewide in Virginia, and 15.8 percent bachelor's degree or higher educational attainment in Somerset County vs. 40.9 percent statewide in Maryland).[56]
- Have more limited broadband access (*i.e.*, 72.8 percent of households in Accomack County have a broadband internet subscription vs. 86.1 percent statewide in Virginia, and 80.1 percent of households in Somerset County have a broadband internet subscription vs. 88.5 percent statewide in Maryland).[57]

Chesapeake Utilities' Del Mar Pathway Project began construction in January 2020 and, among other improvements, included extending piped natural gas into Somerset County, Maryland to anchor tenants University of Maryland Eastern Shore and Maryland Eastern Correctional Institute. Before the Del Mar Pathway Project, Somerset County was one of only three counties in Maryland that did not have access to piped natural gas.[58]

In addition to providing piped natural gas to the anchor tenants, the Del Mar Pathway Project also appears to have had a significant positive impact on Somerset County's Princess Anne Industrial Park. Immediately after pipeline construction began, the park experienced "an explosion" of activity as multiple manufacturers announced plans to move to the park.[59]

Among these were:

- Millennium Microwave, an electronics manufacturer that serves the defense industry as well as commercial clients.

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[53] Data Source: U.S. Census Bureau, Annual Population Estimates.
[54] Data Source: U.S. Census Bureau, Quick Facts.
[55] Data Source: U.S. Census Bureau, U.S. Census Bureau, American Community Survey.
[56] Data Source: U.S. Census Bureau, U.S. Census Bureau, American Community Survey.
[57] Data Source: U.S. Census Bureau, U.S. Census Bureau, American Community Survey.
[58] Data Source: Chesapeake Utilities Corporation website. Governor Hogan Celebrates a New Abundant and Resilient Energy Resource for Somerset County — Chesapeake Utilities and Eastern Shore Natural Gas Company bring natural gas service to Somerset County. June 16, 2022.
[59] Data Source: SBY Business Journal. Princess Anne Industrial Park Sees Increase in Activity - SBJ (sbybiz.org). January 29, 2021.

- Process Integration, a manufacturer of customized automation solutions.
- Element Consulting, which intends to construct a medical cannabis manufacturing facility in the park.
- Planet Found, a biogas firm that uses chicken litter to produce methane.

In addition, because many residents typically convert to natural gas once the infrastructure is in place to serve anchor tenants and residential hook-ups become available, state and county officials have also highlighted the benefits that natural gas deployment to Somerset County will have on lower-income and middle-income households who will reap the benefit of lower utility bills.[60]

Limitations

It is important to keep in mind, however, that extension of piped natural gas into Accomack County will not happen in a vacuum. Like most rural communities in Virginia and around the country, Accomack County has other challenges that need to be considered. Or, as one participant in the stakeholder interviews rather pointedly put it, "natural gas is a tool that will aid in economic development, but it alone will not drive economic development." This portion of the section briefly mentions a few of those challenges.

Transportation

Public transportation is limited. Service is provided by Star Transit Monday through Friday during extended business hours except on holidays and includes two north-south routes, and two routes serving the Chincoteague and Charles City areas.

Workforce

Accomack County has limited workforce availability. In 2021, the county had a civilian workforce of 15,176 and all but 660 of those workers were employed.[61] In 2019, only 58.8 percent of jobs in the county were filled by county residents, with 41.2 percent of those jobs filled by residents of other localities who commute into Accomack County to work.[62] And finally, Accomack County is challenged by relatively low educational attainment levels with only 19.7 percent of the county's residents at a bachelor's degree or higher as compared to 39.5 percent statewide in Virginia.

Housing

As discussed earlier in the demographic profile portion of the *Baseline Profile of Accomack County* section, Accomack County's housing stock tends to be older – over half of the housing in the county was

[60] Data Source: Chesapeake Utilities Corporation website. Governor Hogan Celebrates a New Abundant and Resilient Energy Resource for Somerset County — Chesapeake Utilities and Eastern Shore Natural Gas Company bring natural gas service to Somerset County. June 16, 2022.
[61] Data Source: U.S. Bureau of Labor Statistics.
[62] Data Sources: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics.

constructed before 1980.[63] In addition, apartments and townhomes comprise less than one percent of owner-occupied housing in Accomack County compared to 16 percent statewide.[64] Finally, an analysis by the Accomack-Northampton Planning District Commission identified significant housing gaps for households in the lowest and highest income categories in Accomack County. According to that analysis, households that were below 30 percent of area median income faced a shortage of 701 housing units, while households that were at 81 percent or more of area median income faced a shortage of 1,535 housing units.[65]

Water and Sewer

Central water and sewer are generally not available in Accomack County. Various sections of the County Comprehensive Plan discuss the need for central water and sewer to address housing and potential groundwater contamination issues in the county.

Limited Number of Industrial Sites

According to VEDP and Accomack County databases, the county currently has one existing empty industrial building, Eastern Shore Seafood, as well as available acreage in the Wallops Research Park, in the Accawmacke Office Park, and in the Accomack Industrial/Business Park near the airport.

- Eastern Shore Seafood is a 155,000-square-foot building that was previously used as a clam processing facility. The building, which is located on U.S. Route 13, has been empty for eight to ten years. The property is zoned agricultural and residential and has electric utilities but only on-site well water and on-site septic.
- Wallops Research Park, located adjacent to NASA Wallops Flight Facility, consists of 200 acres of land, of which approximately 140 acres are available for commercial and industrial development. The park has access to utilities including electricity, water, sewer, and broadband.
- The Accawmacke Office Park, also located on U.S. Route 13 has approximately a total of 5 acres of land available, with the largest contiguous parcel being 2 acres. Utilities include electricity, water, sewer, and broadband.
- The Accomack Industrial/Business Park is adjacent to both the Accomack County Airport and the Eastern Shore Community College along U.S. Route 13. The park has access to utilities including electricity, water, sewer, and broadband. Current industries located at the park include retail, manufacturing, and service industries.

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[63] Data Sources: Accomack-Northampton Planning District Commission, *Eastern Shore of Virginia Regional Housing Study*, March 2022 and U.S. Census Bureau, American Community Survey.

[64] Data Sources: Accomack-Northampton Planning District Commission, *Eastern Shore of Virginia Regional Housing Study*, March 2022 and U.S. Census Bureau, American Community Survey.

[65] Data Sources: Accomack-Northampton Planning District Commission, *Eastern Shore of Virginia Regional Housing Study*, March 2022and U.S. Department of Housing and Urban Development, Comprehensive Housing Affordability Strategy.

Economic and Fiscal Impact

This section quantifies the likely economic and fiscal contribution that the extension of the natural gas pipeline into Accomack County would make to Accomack County and to the Commonwealth of Virginia. To accomplish that task, the analysis employs a commonly used regional economic impact model called IMPLAN. The IMPLAN model uses regional and national economic data to construct traditional economic multipliers and uses those multipliers to quantify the economic and fiscal impacts.

Economic multipliers measure the ripple effects that an expenditure has as it makes its way through the economy. For example, when a construction contractor purchases goods and services or pays its workers, thereby generating income for someone else, which is in turn spent, becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

In the analysis that follows, these impact estimates are divided into three categories. First-round direct impact measures the direct economic contribution that the construction of the pipeline would make to the local economy (e.g., own employment, wages paid, and goods and services purchased). Second-round indirect and induced impact measures the economic ripple effects of that first-round direct impact in terms of business-to-business, and household-to-business, transactions. The total impact is simply the sum of the first- and second-round impacts. These categories of impact are described in terms of employment (the jobs that are created), labor income (the wages and benefits associated with those jobs), and economic output (the total amount of economic activity that is created in the economy).

ONE-TIME CONSTRUCTION IMPACT

This portion of the section assesses the economic and fiscal impact that the one-time pulse of activity associated with the construction of the natural gas pipeline would have on Accomack County and the state of Virginia.

Assumptions

The analysis is based on the following assumptions:

- Total capital investment costs associated with the infrastructure expansion required to extend natural gas service to Accomack County are estimated to be approximately between $75.0 – $97.5 million (scenario 1) and $100.0 – $130.0 million (scenario 2).[66]

[66] Data Source: Chesapeake Utilities Corporation. Please note that the cost estimates are preliminary desktop estimates. Cost estimates could vary significantly and could range up to $97.5 million (Scenario 1, + 30% estimate) and up to $130.0 million (Scenario 2, +30% estimate). Scenario 1 would provide for 5,500 dekatherms per day of firm capacity while scenario 2 would add up to 7,000 dekatherms per day of off-peak firm capacity.

Scenario	Mid	+30%
1	$75,000,000	$97,500,000
2	$100,000,000	$130,000,000

- The cost of the infrastructure constructed in Virginia for scenarios 1 and 2, using midpoint costs, is estimated to be approximately $20.0 and $30.0 million, respectively.[67]
    - It is assumed that approximately 60 percent of the total could be spent with vendors in Virginia.[68]
    - $4.25 million of that total are taxable materials and supplies.[69]
- For ease of explication, construction is assumed to take place in one representative calendar year.

Economic Benefit

Applying these assumptions in the IMPLAN model results in the following estimates of economic and fiscal impact shown in Table 5. As these data indicate, expenditures associated with the construction of a natural gas pipeline in Accomack County would directly support approximately: 1) 103 jobs, 2) $5.2 million in labor income, and 3) $15.0 million in economic output to Accomack County (in 2022 dollars).

Taking into account the economic ripple effects that direct impact would generate, the estimated total impact on Accomack County would support approximately: 1) 143 jobs, 2) $7.0 million in labor income, 3) $21.2 million in economic output, and 4) $0.8 million state and local tax revenue (in 2022 dollars).

Table 5: Estimated Total Economic and Fiscal Impact on Accomack County from Construction of the Natural Gas Pipeline (2022 Dollars)[70]

	Employment	Labor Income	Output
1st Round Direct Economic Activity	103	$5,174,200	$15,000,000
2nd Round Indirect and Induced Economic Activity	40	$1,790,700	$6,213,000
Total Economic Activity*	**143**	**$6,964,900**	**$21,213,000**
Fiscal Impact			
State and Local Tax Revenue			**$762,900**

**Totals may not sum due to rounding*

[67] Data Source: Chesapeake Utilities Corporation.
[68] Derived from assumptions provided by Chesapeake Utilities Corporation.
[69] Data Source: Chesapeake Utilities Corporation.
[70] Please note that although employment within a local construction sector can sometimes quickly expand to take advantage of new opportunities, because of the relatively small size of Accomack County's existing construction sector and the limited information provided on the types of construction expenditures, it is not possible to know with certainty what proportion of these jobs would go to county construction contractors or be filled by County residents.

Fiscal Benefit

Table 6 summarizes the additional estimated sales and use tax revenue that would come from taxation of the materials and supplies delivered to Accomack County for the construction of the pipeline. Based on a total capital investment in taxable materials of approximately $4.25 million, the resulting sales and use tax revenue is estimated to be approximately $42,500 for Accomack County and approximately $182,750 for the state of Virginia (in 2022 dollars).

Table 6: Estimated Sales and Use Tax Revenue from Taxation of the Materials and Supplies for the Construction of the Natural Gas Pipeline (2022 Dollars)

		Virginia	Accomack County
Estimated Cost of Materials and Supplies	$4,250,000		
Sales and Use Tax Rate		4.3%	1%
Estimated Sales and Use Tax Revenue		**$182,750**	**$42,500**

POTENTIAL ONGOING IMPACT OF NATURAL GAS PIPELINE

This portion of the section estimates the economic and fiscal impact that the availability of natural gas to businesses in Accomack County would have on the county and on the state of Virginia. It should be noted at the outset that it is not possible to know with certainty what the actual impact would be. The analysis that follows is based on hypotheticals and assumptions used to portray a potential impact.

Chesapeake Utilities Pipeline Direct Operational Impact

Chesapeake Utilities would likely set up a local distribution company to oversee the operations of the pipelines in Virginia. It is currently unknown if this will include a local office in Virginia or Maryland with a small number of employees. Any potential impact stemming from these operations is therefore excluded from the analysis.

The infrastructure investments in Virginia would be assessed by the Virginia Department of Taxation. Since the infrastructure would be new to the county and state, it would be assessed using the cost approach in year one, moving to an income approach in the years thereafter.[71] Since data on the potential income stream of Chesapeake Utilities is unknown, the fiscal impact stemming from the taxation of the infrastructure located in Virginia cannot be calculated. Similarly, the potential state income tax revenues from the taxation of Chesapeake Utilities' revenues cannot be calculated because the data is currently not available.

[71] Based on information provided by the Virginia Department of Taxation, Railroad and Pipeline Appraisal Section.

Cost Savings to Existing Businesses

Based on interviews with existing businesses in Accomack County, consumption of propane amounts to approximately 8.8 million gallons per year (or 807,631 million Btu).[72] Using the average annual industrial prices for propane and natural gas in the U.S. in 2021, the annual cost of purchasing propane for their fuel needs would have amounted to approximately $11.2 million compared to approximately $4.3 million if these businesses would have had access to natural gas. As shown in Table 7, this would have constituted a cost of savings of approximately $6.9 million or 62 percent.[73]

Table 7: Estimated Annual Fuel Cost Comparison for Existing Accomack County Businesses (based on 2021 U.S. Annual Average Rates)[74]

	Million Btu	Price per Million Btu[75]	Total Estimated Annual Fuel Cost	% Natural Gas Savings
Estimated Annual Usage	807,631			
Natural Gas		$5.29	$4,275,200	
Propane		$13.81	$11,152,300	
Estimated Cost Savings		**$8.52**	**$6,877,100**	**62%**

**Totals may not sum due to rounding*

Some businesses additionally rely on the use of #2 heating oil. Table 8 summarizes the benefit to Accomack County businesses using #2 heating oil in addition to propane. Please note that the total usage amount listed likely understates the actual amounts of #2 heating oil purchased because only a small number of businesses provided data for this category.

Based on the data available, replacing the annually purchased 15,000 gallons of #2 heating oil (or approximately 2,060 million Btu) with natural gas would result in cost savings of approximately $21,700 or 67 percent.

[72] Data Source: Stakeholder interviews. Includes NASA and tenants (i.e. Navy, NOAA), Wallops Flight Facility, Perdue, Tyson, Coastline Chemical, and Sharptec. Commonwealth Chesapeake Peaker plant and Rocket Lab are not included.
[73] U.S. average prices were used in these calculations to provide a general comparison of the various fuel sources because data on the potential future pricing of natural gas to Accomack County customers are currently not available and because prices between Virginia, Maryland, and Delaware vary greatly.
[74] Data Source: U.S. Energy Information Administration. Average annual fuel prices for propane and #2 heating oil calculated based on 6-month data available. Average prices shown are calculated based on annual average fuel prices for each fuel type divided by the fuel's heat content per unit in Btu and multiplied by 1 million.
[75] Data Source: U.S. Energy Information Administration. Industrial price for natural gas and wholesale price for propane.

Table 8: Estimated Annual Fuel Cost Comparison for Existing Accomack County Businesses (based on 2021 U.S. Average Rates)[76]

	Million Btu	Price per Million Btu[77]	Total Estimated Annual Fuel Cost	% Natural Gas Savings
Estimated Annual Usage	2,060			
Natural Gas		$5.29	$10,900	
#2 Heating Fuel		$15.83	$32,600	
Estimated Cost Savings		**$10.53**	**$21,700**	**67%**

Jobs Saved – Loss of Perdue and Tyson

As discussed earlier in the existing anchor tenant portion of the *Economic Development Potential* section, Perdue and Tyson constitute essential businesses to Accomack County – for economic and fiscal reasons. Combined, these two facilities directly account for approximately one quarter of total employment in the county and consistently rank among the top ten taxpayers in the county. This portion of the section provides a more detailed estimate of the economic and fiscal loss that Accomack County would incur if these facilities were to close. Or, conversely the economic and fiscal benefit to Accomack County if both facilities remain cost competitive and continue to operate.

Assumptions

The analysis is based on the following assumptions:

- Total employment at the processing and rendering operations is 2,900 jobs.

Economic and Fiscal Loss to Accomack County from Closure

Termination of operations at Tyson and Perdue would lead to significant negative economic impacts on Accomack County. Applying the above stated assumptions in the IMPLAN model results in estimates of economic and fiscal impact shown in Table 9. As these data indicate, the ongoing operations of Tyson and Perdue on average directly support approximately: 1) 2,900 jobs, 2) $132.8 million in labor income, and 3) $926.5 million in economic output to Accomack County (in 2022 dollars).

Taking into account the economic ripple effects stemming business to business and employee to business interactions, the estimated total impact on Accomack County is approximately: 1) 4,160 jobs, 2) $183.5 million in labor income, 3) $1.2 billion in economic output, and 4) $22.2 million in total state and local tax revenue (in 2022 dollars).

[76] Data Source: U.S. Energy Information Administration. Average annual fuel prices for propane and #2 heating oil calculated based on 6-month data available. Average prices shown are calculated based on annual average fuel prices for each fuel type divided by the fuel's heat content per unit in Btu and multiplied by 1 million.
[77] Data Source: U.S. Energy Information Administration. Industrial price for natural gas and wholesale price for #2 heating oil.

Table 9: Estimated Total Annual Economic and Fiscal Impact on Accomack County from Ongoing Operations of Perdue and Tyson (2022 Dollars)[78]

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	2,900	$132,833,800	$926,507,700
2nd Round Indirect and Induced Economic Activity	1,260	$50,619,900	$288,567,500
Total Economic Activity	**4,160**	**$183,453,700**	**$1,215,075,200**
Fiscal Impact			
State and Local Tax Revenue			**$22,196,200**

**Totals may not sum due to rounding*

Development Scenario: Suppliers to Rocket Lab – Precision Cleaning Service

Based on the stakeholder interviews with Virginia Space and Rocket Lab regarding likely suppliers that could be attracted to Accomack County by their facilities, this portion of the section provides an analysis of the potential economic impact that a precision cleaning service could have on Accomack County.

Assumptions

The analysis is based on the following assumptions:

- Total employment at the facility would be 20 jobs paying average annual wages of $54,700.[79]

Economic Benefit to Accomack County

Applying the above-stated assumptions in the IMPLAN model results in estimates of economic and fiscal impact shown in Table 10. As these data indicate, the addition of a cleaning facility serving Rocket Lab would on average directly support approximately: 1) 20 jobs, 2) $1.6 million in labor income, and 3) $4.3 million in economic output to Accomack County (in 2022 dollars).

Taking into account the economic ripple effects stemming business-to-business and household-to-business interactions, the estimated total impact on Accomack County is approximately: 1) 28 jobs, 2) $1.8 million in labor income, 3) $5.4 million in economic output, and 4) $0.2 million in total state and local tax revenue (in 2022 dollars).

[78] Please note that the in-commuting rate to Accomack County was adjusted to approximately 41 percent in IMPLAN.
[79] Derived from Bureau of Labor Statistics data on annual average industry employment, establishments, and wages in Virginia and in the U.S.

Table 10: Estimated Total Annual Economic and Fiscal Impact on Accomack County from Ongoing Operations of an Oxygen Cleaning Facility (2022 Dollars)[80]

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	20	$1,561,500	$4,329,900
2nd Round Indirect and Induced Economic Activity	8	$285,600	$1,102,400
Total Economic Activity	**28**	**$1,847,100**	**$5,432,300**
Fiscal Impact			
State and Local Tax Revenue			**$154,300**

**Totals may not sum due to rounding*

Development Scenario: Suppliers to Rocket Lab – Non-Destructive Weld Testing Service

Based on the stakeholder interviews with Virginia Space and Rocket Lab regarding likely suppliers that could be attracted to Accomack County by their facilities, this portion of the section provides an analysis of the potential economic impact that a non-destructive weld testing service could have on Accomack County.

Assumptions

The analysis is based on the following assumptions:

- Total employment at the facility would be 10 jobs paying average annual wages of $69,700.[81]

Economic Benefit to Accomack County

Applying the above-stated assumptions in the IMPLAN model results in estimates of economic and fiscal impact shown in Table 11. As these data indicate, the addition of a testing services supplier would on average directly support approximately: 1) 10 jobs, 2) $1.0 million in labor income, and 3) $2.0 million in economic output to Accomack County (in 2022 dollars).

Taking into account the economic ripple effects stemming business-to-business and household-to-business interactions, the estimated total impact on Accomack County is approximately: 1) 16 jobs, 2) $1.3 million in labor income, 3) $2.9 million in economic output, and 4) $0.1 million in total state and local tax revenue (in 2022 dollars).

[80] Please note that the in-commuting rate to Accomack County was adjusted to approximately 41 percent in IMPLAN.
[81] Derived from Bureau of Labor Statistics data on annual average industry employment, establishments, and wages in Virginia and the U.S.

Table 11: Estimated Total Annual Economic and Fiscal Impact on Accomack County from Ongoing Operations of a Testing Services Supplier to Rocket Lab (2022 Dollars)[82]

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	10	$996,300	$2,013,400
2nd Round Indirect and Induced Economic Activity	6	$258,800	$839,400
Total Economic Activity	**16**	**$1,255,100**	**$2,852,800**
Fiscal Impact			
State and Local Tax Revenue			**$82,100**

**Totals may not sum due to rounding*

Development Scenario: Food Processing – Snack Food Manufacturing Facility

The following section provides an analysis of the potential economic impact that the addition of a food processing facility would provide to Accomack County on an ongoing basis. Based on the stakeholder interviews and data provided by VEDP, the analysis models the addition of a snack food manufacturing facility, which would require natural gas for its operations.

Assumptions

The analysis is based on the following assumptions:

- Total employment at the facility would be 85 jobs paying existing Accomack County prevailing average wages.[83]

Economic Benefit to Accomack County

Applying the above-stated assumptions in the IMPLAN model results in estimates of economic and fiscal impact shown in Table 12. As these data indicate, the addition of a snack food manufacturing facility would on average directly support approximately: 1) 85 jobs, 2) $5.2 million in labor income, and 3) $50.7 million in economic output to Accomack County (in 2022 dollars).

Taking into account the economic ripple effects stemming business-to-business and household-to-business interactions, the estimated total impact on Accomack County is approximately: 1) 144 jobs, 2) $7.7 million in labor income, 3) $59.8 million in economic output, and 4) $0.9 million in total state and local tax revenue (in 2022 dollars).

[82] Please note that the in-commuting rate to Accomack County was adjusted to approximately 41 percent in IMPLAN.
[83] Derived from Conway announcements database for projects in the "Other Food Manufacturing" sector in Virginia 2012-2022.

Table 12: Estimated Total Annual Economic and Fiscal Impact on Accomack County from Ongoing Operations of a Snack Food Manufacturing Facility (2022 Dollars)[84]

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	85	$5,152,400	$50,663,200
2nd Round Indirect and Induced Economic Activity	59	$2,575,300	$9,096,000
Total Economic Activity	**144**	**$7,727,700**	**$59,759,200**
Fiscal Impact			
State and Local Tax Revenue			**$936,100**

**Totals may not sum due to rounding*

[84] Please note that the in-commuting rate to Accomack County was adjusted to approximately 41 percent in IMPLAN.

Conclusion

This report has assessed the potential economic and fiscal impact on Accomack County associated with the extension of an existing Maryland natural gas pipeline, owned by Chesapeake Utilities Corporation, to customers in Accomack County, Virginia. Anchor tenants in Accomack County would likely include the Perdue and Tyson chicken processing plants, the NASA Wallops Flight Facility, and adjacent enterprises.

That assessment has shown that Accomack County, like many rural Virginia communities, faces multiple challenges. It is experiencing a declining employment base, a declining population, a shortage of income-appropriate housing for households in the county's lowest- and highest-income categories, limited workforce availability, limited central water and sewer, and other issues.

On-site interviews conducted with 35 private and government sector stakeholders indicated that the extension of piped natural gas to the County is seen as critical to securing the continued operation of the Perdue and Tyson chicken processing plants. Together, these plants directly account for approximately one-third of all private employment in Accomack County and indirectly support a large number of poultry operations, grain producers, and other businesses in the county. Both plants use propane as a main fuel source and purchase millions of gallons each year. The higher cost of propane compared to piped natural gas places these plants at a significant competitive disadvantage relative to other processing facilities across the country where piped natural gas is available.

Many of those interviewed also pointed to the ongoing expansion of commercial space activity at the NASA Wallops Flight Facility as a potentially transformative economic opportunity for the county. Rocket Lab recently selected Wallops Island as the launch site for its new Neutron rocket and announced that it would be bringing up to 250 professional and technical jobs to Accomack County to support manufacturing and operations facilities that will be part of the Neutron rocket program. Like many newer rocket designs, the Neutron rocket uses liquid methane (natural gas) as a propellant. In addition, the extension of piped natural gas into the County was seen as a way to also attract food processors and other manufacturers, warehousing and distribution facilities, controlled-environment agriculture, and the development of much-needed residential housing.

The experiences of adjacent counties in Maryland that recently gained access to the same natural gas pipeline provide real-world evidence that the extension of piped natural gas into Accomack County could be a catalyst for accelerated economic development. Pipeline construction in Somerset County, Maryland, began in 2020 and was accompanied by "an explosion" of activity in the County's Princess Anne Industrial Park as multiple manufacturers announced plans to move to the park. Somerset County is immediately north of Accomack County. Both are rural communities and share many of the same characteristics and challenges.

Finally, this assessment has shown that, as with most infrastructure projects, the economic and fiscal impact of the proposed extension of piped natural gas into Accomack County would generally come

from four sources: construction, cost savings to users, jobs saved, and derivative economic development. Mangum Economics' analysis of these four sources of economic activity shows that could provide a substantial boost to Accomack County's economy.

However, it is important to keep in mind that the extension of piped natural gas into Accomack County will not happen in a vacuum. Like most rural communities in Virginia and around the country, Accomack County has other challenges that would need to be considered. Or, as one participant in the stakeholder interviews rather pointedly put it, "natural gas is a tool that will aid in economic development, but it alone will not drive economic development."

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.